



# 3

## SEQUENCE LISTING

<110> Mack, David H.  
Gish, Kurt C.  
Afar, Daniel  
Eos Biotechnology, Inc.

<120> Methods of Diagnosis of Breast Cancer, Compositions and  
Methods of Screening for Modulators of Breast Cancer

<130> 018501-005210US

<140> US 10/058,270

<141> 2002-01-24

<150> US 60/263,965

<151> 2001-01-24

<150> US 60/265,928

<151> 2001-02-02

<150> US 09/829,472

<151> 2001-04-09

<150> US 60/282,698

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<151> 2001-05-04

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<170> PatentIn Ver. 2.1

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<212> PRT

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Lys Cys His His His Cys Pro Glu Asp Ser Val Asn Asn Ile Cys Ser
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Thr Asp Gly Tyr Cys Phe Thr Met Ile Glu Glu Asp Asp Ser Gly Leu
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Pro Val Val Thr Ser Gly Cys Leu Gly Leu Glu Gly Ser Asp Phe Gln
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Cys Arg Asp Thr Pro Ile Pro His Gln Arg Arg Ser Ile Glu Cys Cys
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Phe Cys Tyr Phe Arg Tyr Lys Arg Gln Glu Thr Arg Pro Arg Tyr Ser
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Ile Gly Leu Glu Gln Asp Glu Thr Tyr Ile Pro Pro Gly Glu Ser Leu
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Ser	Thr	Gln	Gly	Lys	Pro	Ala	Ile	Ala	His	Arg	Asp	Leu	Lys	Ser	Lys	325	330	335	
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Tyr	Ser	Phe	Gly	Leu	Ile	Leu	Trp	Glu	Val	Ala	Arg	Arg	Cys	Val	Ser	405	410	415	
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Ser	Asp	Pro	Ser	Tyr	Glu	Asp	Met	Arg	Glu	Ile	Val	Cys	Ile	Lys	Lys	435	440	445	
Leu	Arg	Pro	Ser	Phe	Pro	Asn	Arg	Trp	Ser	Ser	Asp	Glu	Cys	Leu	Arg	450	455	460	
Gln	Met	Gly	Lys	Leu	Met	Thr	Glu	Cys	Trp	Ala	His	Asn	Pro	Ala	Ser	465	470	475	480
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<210> 10
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<212> PRT
<213> Homo sapiens

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Leu Trp Asn Glu Gly Arg Ala Asp Glu Val Val Ser Ala Ser Val Arg
      35              40              45

Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp Ser Lys Asn His
      50              55              60

Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu Ser Lys Glu Leu Ile
      65              70              75              80

Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile Ala Ser Ser Phe Thr Glu
      85              90              95

Thr His Tyr Leu Gln Asp Gly Thr Asp Val Ser Leu Ala Arg Asn Tyr
      100              105              110

Thr Val Ile Leu Gly His Cys Tyr Tyr His Gly His Val Arg Gly Tyr
      115              120              125

Ser Asp Ser Ala Val Ser Leu Ser Thr Cys Ser Gly Leu Arg Gly Leu
      130              135              140

Ile Val Phe Glu Asn Glu Ser Tyr Val Leu Glu Pro Met Lys Ser Ala
      145              150              155              160

Thr Asn Arg Tyr Lys Leu Phe Pro Ala Lys Lys Leu Lys Ser Val Arg
      165              170              175

Gly Ser Cys Gly Ser His His Asn Thr Pro Asn Leu Ala Ala Lys Asn
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Arg	Glu	Phe	Gln	Arg	Gln	Gly	Lys	Asp	Leu	Glu	Lys	Val	Lys	Gln	Arg			
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Leu	Ile	Glu	Ile	Ala	Asn	His	Val	Asp	Lys	Phe	Tyr	Arg	Pro	Leu	Asn			
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Ile	Arg	Ile	Val	Leu	Val	Gly	Val	Glu	Val	Trp	Asn	Asp	Met	Asp	Lys			
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Cys	Ser	Val	Ser	Gln	Asp	Pro	Phe	Thr	Ser	Leu	His	Glu	Phe	Leu	Asp			
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Trp	Arg	Lys	Met	Lys	Leu	Leu	Pro	Arg	Lys	Ser	His	Asp	Asn	Ala	Gln			
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Gly	His	Asn	Phe	Gly	Met	Asn	His	Asp	Thr	Leu	Asp	Arg	Gly	Cys	Ser			
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Gly	Tyr	Pro	Phe	Pro	Met	Val	Phe	Ser	Ser	Cys	Ser	Arg	Lys	Asp	Leu			
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Glu	Val	Arg	Glu	Ser	Phe	Gly	Gly	Gln	Lys	Cys	Gly	Asn	Arg	Phe	Val			
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Glu	Glu	Gly	Glu	Glu	Cys	Asp	Cys	Gly	Glu	Pro	Glu	Glu	Cys	Met	Asn			
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Arg	Cys	Cys	Asn	Ala	Thr	Thr	Cys	Thr	Leu	Lys	Pro	Asp	Ala	Val	Cys			
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Arg	Pro	Ser	Arg	Pro	Pro	Arg	Gly	Phe	Gln	Pro	Cys	Gln	Ala	His	Leu	755	760	765
Gly	His	Leu	Gly	Lys	Gly	Leu	Met	Arg	Lys	Pro	Pro	Asp	Ser	Tyr	Pro	770	775	780
Pro	Lys	Asp	Asn	Pro	Arg	Arg	Leu	Leu	Gln	Cys	Gln	Asn	Val	Asp	Ile	785	790	795
Ser	Arg	Pro	Leu	Asn	Gly	Leu	Asn	Val	Pro	Gln	Pro	Gln	Ser	Thr	Gln	805	810	815
Arg	Val	Leu	Pro	Pro	Leu	His	Arg	Ala	Pro	Arg	Ala	Pro	Ser	Val	Pro	820	825	830

Ala Arg Pro Leu Pro Ala Lys Pro Ala Leu Arg Gln Ala Gln Gly Thr  
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Cys Lys Pro Asn Pro Pro Gln Lys Pro Leu Pro Ala Asp Pro Leu Ala  
850 855 860

Arg Thr Thr Arg Leu Thr His Ala Leu Ala Arg Thr Pro Gly Gln Trp  
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Glu Thr Gly Leu Arg Leu Ala Pro Leu Arg Pro Ala Pro Gln Tyr Pro  
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His Gln Val Pro Arg Ser Thr His Thr Ala Tyr Ile Lys  
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<212> DNA  
<213> Homo sapiens

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<212> PRT
<213> Homo sapiens

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      35              40              45

Asp Cys Arg Pro Phe Leu Ala His Ser Ala Gly Tyr Ile Leu Gly Ser
      50              55              60

Val Asn Val Arg Cys Asn Thr Ile Val Arg Arg Arg Ala Lys Gly Ser
      65              70              75              80

Val Ser Leu Glu Gln Ile Leu Pro Ala Glu Glu Glu Val Arg Ala Arg
      85              90              95

Leu Arg Ser Gly Leu Tyr Ser Ala Val Ile Val Tyr Asp Glu Arg Ser
      100             105             110

Pro Arg Ala Glu Ser Leu Arg Glu Asp Ser Thr Val Ser Leu Val Val
      115             120             125

Gln Ala Leu Arg Arg Asn Ala Glu Arg Thr Asp Ile Cys Leu Leu Lys
      130             135             140

Gly Gly Tyr Glu Arg Phe Ser Ser Glu Tyr Pro Glu Phe Cys Ser Lys
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Thr Lys Ala Leu Ala Ala Ile Pro Pro Pro Val Pro Pro Ser Ala Thr
      165             170             175

Glu Pro Leu Asp Leu Gly Cys Ser Ser Cys Gly Thr Pro Leu His Asp
      180             185             190

Gln Gly Gly Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly Ser Ala
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Tyr His Ala Ala Arg Arg Asp Met Leu Asp Ala Leu Gly Ile Thr Ala
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Leu Leu Asn Val Ser Ser Asp Cys Pro Asn His Phe Glu Gly His Tyr
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Gln Tyr Lys Cys Ile Pro Val Glu Asp Asn His Lys Ala Asp Ile Ser
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Ser Trp Phe Met Glu Ala Ile Glu Tyr Ile Asp Ala Val Lys Asp Cys
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 305 310 315 320  
 Phe Ser Phe Met Gly Gln Leu Leu Gln Phe Glu Ser Gln Val Leu Ala  
 325 330 335  
 Thr Ser Cys Ala Ala Glu Ala Ala Ser Pro Ser Gly Pro Leu Arg Glu  
 340 345 350  
 Arg Gly Lys Thr Pro Ala Thr Pro Thr Ser Gln Phe Val Phe Ser Phe  
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 Ala Ala Thr Thr Ala Thr Thr Ala Ala Pro Thr Thr Ala Thr Thr Ala  
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Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val Leu Pro Lys Trp Val  
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Gly Asp Leu Pro Asn Gly Arg Val Cys Pro  
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35 40 45  
Ala Ser Met Thr Ala Asp Ser Lys Ala Ala Arg Leu Arg Arg Ile Glu  
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Thr	Phe	Ala	Leu	Asn	Ala	Asp	Arg	Trp	Tyr	Gln	Tyr	Phe	Thr	Lys	Thr	100	105	110	
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Gly	Ala	Gln	Ala	Met	Tyr	Gln	Gly	Phe	Trp	Ser	Glu	Ala	Asp	Val	Thr	340	345	350	
Arg	Pro	Phe	Val	Ser	Gln	Ala	Val	Ile	Thr	Asp	Gly	Lys	Tyr	Phe	Ser	355	360	365	
Phe	Phe	Cys	Tyr	Gln	Leu	Asn	Thr	Leu	Ala	Leu	Thr	Thr	Gln	Ala	Asp	370	375	380	

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Lys Ser Gln Leu Leu Glu Asn  
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<211> 4151

<212> DNA

<213> Homo sapiens

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<210> 18  
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 <212> PRT  
 <213> Homo sapiens

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    35                      40                      45

Leu Ala Ala Thr Leu Val Lys Phe Glu Cys Ala Gln Ser Glu Leu Gln
    50                      55                      60

Asp Leu Arg Ser Lys Met Leu Ser Lys Glu Val Ser Cys Gln Glu Leu
    65                      70                      75                      80

Lys Ala Glu Met Glu Ser Tyr Lys Glu Asn Asn Ala Arg Lys Ser Ser
                85                      90                      95

Leu Leu Thr Ser Leu Arg Asp Arg Val Gln Glu Leu Glu Glu Glu Ser
    100                      105                      110

Ala Ala Leu Ser Thr Ser Lys Ile Arg Thr Glu Ile Thr Ala His Ala
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Val	Ser	Lys	Asn	Cys	Arg	Lys	His	Glu	Glu	Phe	Leu	Thr	Gln	Leu	Arg	
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Asp	Cys	Leu	Asp	Pro	Asp	Glu	Arg	Asn	Asp	Lys	Ala	Ser	Asp	Glu	Asp	
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Leu	Ile	Leu	Lys	Leu	Arg	Asp	Leu	Arg	Lys	Glu	Asn	Glu	Phe	Val	Lys	
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Gly	Gln	Ile	Val	Ile	Leu	Glu	Glu	Thr	Ile	Asn	Val	His	Glu	Met	Glu	
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Ala	Lys	Ala	Ser	Arg	Glu	Thr	Ile	Met	Arg	Leu	Ala	Ser	Glu	Val	Asn	
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Glu	Val	Lys	Ile	Phe	Gln	Glu	Arg	Leu	Leu	Ala	Gly	Gln	Gln	Val	Trp	
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Ser	Gly	Gly	Val	Leu	Arg	Asp	Asn	Leu	Asn	Phe	Glu	Lys	Gln	Lys	Tyr	
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 <213> Homo sapiens

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Arg Ala Val Pro Phe Glu Asn Leu Asn Ile His Cys Gly Asp Ala Met
  35              40              45

Asp Leu Gly Leu Glu Ala Ile Phe Asp Gln Val Val Arg Arg Asn Arg
  50              55              60

Gly Gly Trp Cys Leu Gln Val Asn His Leu Leu Tyr Trp Ala Leu Thr
  65              70              75              80

Thr Ile Gly Phe Glu Thr Thr Met Leu Gly Gly Tyr Val Tyr Ser Thr
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Pro Ala Lys Lys Tyr Ser Thr Gly Met Ile His Leu Leu Leu Gln Val
 100              105              110

Thr Ile Asp Gly Arg Asn Tyr Ile Val Asp Ala Gly Phe Gly Arg Ser
 115              120              125

Tyr Gln Met Trp Gln Pro Leu Glu Leu Ile Ser Gly Lys Asp Gln Pro
 130              135              140

Gln Val Pro Cys Val Phe Arg Leu Thr Glu Glu Asn Gly Phe Trp Tyr
 145              150              155              160

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Leu Asp Gln Ile Arg Arg Glu Gln Tyr Ile Pro Asn Glu Glu Phe Leu  
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 His Ser Asp Leu Leu Glu Asp Ser Lys Tyr Arg Lys Ile Tyr Ser Phe  
 180 185 190  
 Thr Leu Lys Pro Arg Thr Ile Glu Asp Phe Glu Ser Met Asn Thr Tyr  
 195 200 205  
 Leu Gln Thr Ser Pro Ser Ser Val Phe Thr Ser Lys Ser Phe Cys Ser  
 210 215 220  
 Leu Gln Thr Pro Asp Gly Val His Cys Leu Val Gly Phe Thr Leu Thr  
 225 230 235 240  
 His Arg Arg Phe Asn Tyr Lys Asp Asn Thr Asp Leu Ile Glu Phe Lys  
 245 250 255  
 Thr Leu Ser Glu Glu Glu Ile Glu Lys Val Leu Lys Asn Ile Phe Asn  
 260 265 270  
 Ile Ser Leu Gln Arg Lys Leu Val Pro Lys His Gly Asp Arg Phe Phe  
 275 280 285  
 Thr Ile  
 290

<210> 21  
 <211> 1837  
 <212> DNA  
 <213> Homo sapiens

<400> 21  
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 acccggcgcg ggggaccgac gccaccaacc cacccgaggg tccccaagac aggagctccc 240  
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 agtcattcat caaagacgcc ttgaaatgta aggccacgc tctgcggcac aggttcggct 480  
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<210> 22
<211> 302
<212> PRT
<213> Homo sapiens

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<400> 22
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Ala Thr Phe Asp Pro Ala Arg Gly Thr Asp Ala Thr Asn Pro Pro Glu
      20          25          30

Gly Pro Gln Asp Arg Ser Ser Gln Gln Lys Gly Arg Leu Ser Leu Gln
      35          40          45

Asn Thr Ala Glu Ile Gln His Cys Leu Val Asn Ala Gly Asp Val Gly
      50          55          60

Cys Gly Val Phe Glu Cys Phe Glu Asn Asn Ser Cys Glu Ile Arg Gly
      65          70          75          80

Leu His Gly Ile Cys Met Thr Phe Leu His Asn Ala Gly Lys Phe Asp
      85          90          95

Ala Gln Gly Lys Ser Phe Ile Lys Asp Ala Leu Lys Cys Lys Ala His
      100          105          110

Ala Leu Arg His Arg Phe Gly Cys Ile Ser Arg Lys Cys Pro Ala Ile
      115          120          125

Arg Glu Met Val Ser Gln Leu Gln Arg Glu Cys Tyr Leu Lys His Asp
      130          135          140

Leu Cys Ala Ala Ala Gln Glu Asn Thr Arg Val Ile Val Glu Met Ile
      145          150          155          160

His Phe Lys Asp Leu Leu Leu His Glu Pro Tyr Val Asp Leu Val Asn
      165          170          175

Leu Leu Leu Thr Cys Gly Glu Glu Val Lys Glu Ala Ile Thr His Ser
      180          185          190

Val Gln Val Gln Cys Glu Gln Asn Trp Gly Ser Leu Cys Ser Ile Leu
      195          200          205

Ser Phe Cys Thr Ser Ala Ile Gln Lys Pro Pro Thr Ala Pro Pro Glu
      210          215          220

Arg Gln Pro Gln Val Asp Arg Thr Lys Leu Ser Arg Ala His His Gly
      225          230          235          240

Glu Ala Gly His His Leu Pro Glu Pro Ser Ser Arg Glu Thr Gly Arg
      245          250          255

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Gly Ala Lys Gly Glu Arg Gly Ser Lys Ser His Pro Asn Ala His Ala  
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Arg Gly Arg Val Gly Gly Leu Gly Ala Gln Gly Pro Ser Gly Ser Ser  
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Glu Trp Glu Asp Glu Gln Ser Glu Tyr Ser Asp Ile Arg Arg  
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<210> 23  
 <211> 2560  
 <212> DNA  
 <213> Homo sapiens

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 gtgcctgaag gagcagagct gcagcaccaa gtaccgcacg ctaaggcagt gcgtggcggg 720  
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<210> 24  
 <211> 465  
 <212> PRT  
 <213> Homo sapiens

<400> 24  
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                   20                  25                  30  
 Ser Asp Gln Cys Leu Lys Glu Gln Ser Cys Ser Thr Lys Tyr Arg Thr  
           35                  40                  45  
 Leu Arg Gln Cys Val Ala Gly Lys Glu Thr Asn Phe Ser Leu Ala Ser  
       50                  55                  60  
 Gly Leu Glu Ala Lys Asp Glu Cys Arg Ser Ala Met Glu Ala Leu Lys  
   65                  70                  75                  80  
 Gln Lys Ser Leu Tyr Asn Cys Arg Cys Lys Arg Gly Met Lys Lys Glu  
                   85                  90                  95  
 Lys Asn Cys Leu Arg Ile Tyr Trp Ser Met Tyr Gln Ser Leu Gln Gly  
                   100                  105                  110  
 Asn Asp Leu Leu Glu Asp Ser Pro Tyr Glu Pro Val Asn Ser Arg Leu  
       115                  120                  125  
 Ser Asp Ile Phe Arg Val Val Pro Phe Ile Ser Asp Val Phe Gln Gln  
       130                  135                  140  
 Val Glu His Ile Pro Lys Gly Asn Asn Cys Leu Asp Ala Ala Lys Ala  
   145                  150                  155                  160  
 Cys Asn Leu Asp Asp Ile Cys Lys Lys Tyr Arg Ser Ala Tyr Ile Thr  
                   165                  170                  175  
 Pro Cys Thr Thr Ser Val Ser Asn Asp Val Cys Asn Arg Arg Lys Cys  
                   180                  185                  190  
 His Lys Ala Leu Arg Gln Phe Phe Asp Lys Val Pro Ala Lys His Ser  
       195                  200                  205  
 Tyr Gly Met Leu Phe Cys Ser Cys Arg Asp Ile Ala Cys Thr Glu Arg  
       210                  215                  220  
 Arg Arg Gln Thr Ile Val Pro Val Cys Ser Tyr Glu Glu Arg Glu Lys  
   225                  230                  235                  240  
 Pro Asn Cys Leu Asn Leu Gln Asp Ser Cys Lys Thr Asn Tyr Ile Cys  
                   245                  250                  255  
 Arg Ser Arg Leu Ala Asp Phe Phe Thr Asn Cys Gln Pro Glu Ser Arg  
       260                  265                  270  
 Ser Val Ser Ser Cys Leu Lys Glu Asn Tyr Ala Asp Cys Leu Leu Ala  
       275                  280                  285

Tyr Ser Gly Leu Ile Gly Thr Val Met Thr Pro Asn Tyr Ile Asp Ser  
 290 295 300  
 Ser Ser Leu Ser Val Ala Pro Trp Cys Asp Cys Ser Asn Ser Gly Asn  
 305 310 315 320  
 Asp Leu Glu Glu Cys Leu Lys Phe Leu Asn Phe Phe Lys Asp Asn Thr  
 325 330 335  
 Cys Leu Lys Asn Ala Ile Gln Ala Phe Gly Asn Gly Ser Asp Val Thr  
 340 345 350  
 Val Trp Gln Pro Ala Phe Pro Val Gln Thr Thr Thr Ala Thr Thr Thr  
 355 360 365  
 Thr Ala Leu Arg Val Lys Asn Lys Pro Leu Gly Pro Ala Gly Ser Glu  
 370 375 380  
 Asn Glu Ile Pro Thr His Val Leu Pro Pro Cys Ala Asn Leu Gln Ala  
 385 390 395 400  
 Gln Lys Leu Lys Ser Asn Val Ser Gly Asn Thr His Leu Cys Ile Ser  
 405 410 415  
 Asn Gly Asn Tyr Glu Lys Glu Gly Leu Gly Ala Ser Ser His Ile Thr  
 420 425 430  
 Thr Lys Ser Met Ala Ala Pro Pro Ser Cys Gly Leu Ser Pro Leu Leu  
 435 440 445  
 Val Leu Val Val Thr Ala Leu Ser Thr Leu Leu Ser Leu Thr Glu Thr  
 450 455 460  
 Ser  
 465

<210> 25  
 <211> 1576  
 <212> DNA  
 <213> Homo sapiens

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<210> 26  
 <211> 524  
 <212> PRT  
 <213> Homo sapiens

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<400> 26
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Asn Gly Gly Phe Gly Glu Leu Gly Cys Phe Gly Gly Ser Ala Lys Asp
 20          25          30

Arg Gly Leu Leu Glu Asp Glu Arg Ala Leu Gln Leu Ala Leu Asp Gln
 35          40          45

Leu Cys Leu Leu Gly Leu Gly Glu Pro Pro Ala Pro Arg Ala Gly Glu
 50          55          60

Asp Gly Gly Gly Gly Gly Gly Gly Ala Pro Ala Gln Pro Thr Ala Pro
 65          70          75          80

Pro Gln Pro Ala Pro Pro Pro Pro Pro Ala Ala Pro Pro Ala Ala Pro
 85          90          95

Thr Thr Ala Pro Ala Ala Gln Thr Pro Gln Pro Pro Thr Ala Pro Lys
100          105          110

Gly Ala Ser Asp Ala Lys Leu Cys Ala Leu Tyr Lys Glu Ala Glu Leu
115          120          125

Arg Leu Lys Gly Ser Ser Asn Thr Thr Glu Cys Val Pro Val Pro Thr
130          135          140

Ser Glu His Val Ala Glu Ile Val Gly Arg Gln Gly Cys Lys Ile Lys
145          150          155          160

Ala Leu Arg Ala Lys Thr Asn Thr Tyr Ile Lys Thr Pro Val Arg Gly
165          170          175

Glu Glu Pro Val Phe Met Val Thr Gly Arg Arg Glu Asp Val Ala Thr
180          185          190

Ala Arg Arg Glu Ile Ile Ser Ala Ala Glu His Phe Ser Met Ile Arg
195          200          205

Ala Ser Arg Asn Lys Ser Gly Ala Ala Phe Gly Val Ala Pro Ala Leu
210          215          220

Pro Gly Gln Val Thr Ile Arg Val Arg Val Pro Tyr Arg Val Val Gly
225          230          235          240

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Leu	Val	Val	Gly	Pro	Lys	Gly	Ala	Thr	Ile	Lys	Arg	Ile	Gln	Gln	Gln			
				245					250					255				
Thr	Asn	Thr	Tyr	Ile	Ile	Thr	Pro	Ser	Arg	Asp	Arg	Asp	Pro	Val	Phe			
			260					265					270					
Glu	Ile	Thr	Gly	Ala	Pro	Gly	Asn	Val	Glu	Arg	Ala	Arg	Glu	Glu	Ile			
		275					280					285						
Glu	Thr	His	Ile	Ala	Val	Arg	Thr	Gly	Lys	Ile	Leu	Glu	Tyr	Asn	Asn			
	290					295					300							
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Tyr	Ser	Asp	Ala	Trp	Arg	Val	His	Gln	Pro	Gly	Cys	Lys	Pro	Leu	Ser			
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Tyr	Gly	Gly	Tyr	Leu	Phe	Pro	Gly	Tyr	Gly	Val	Gly	Lys	Gln	Asp	Val			
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Tyr	Tyr	Gly	Val	Ala	Glu	Thr	Ser	Pro	Pro	Leu	Trp	Ala	Gly	Gln	Glu			
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Asn	Ala	Thr	Pro	Thr	Ser	Val	Leu	Phe	Ser	Ser	Ala	Ser	Ser	Ser	Ser			
				405					410					415				
Ser	Ser	Ser	Ala	Lys	Ala	Arg	Ala	Gly	Pro	Pro	Gly	Ala	His	Arg	Ser			
			420					425					430					
Pro	Ala	Thr	Ser	Ala	Gly	Pro	Glu	Leu	Ala	Gly	Leu	Pro	Arg	Arg	Pro			
		435					440					445						
Pro	Gly	Glu	Pro	Leu	Gln	Gly	Phe	Ser	Lys	Leu	Gly	Gly	Gly	Gly	Leu			
	450					455					460							
Arg	Ser	Pro	Gly	Gly	Gly	Arg	Asp	Cys	Met	Val	Cys	Phe	Glu	Ser	Glu			
465					470					475					480			
Val	Thr	Ala	Ala	Leu	Val	Pro	Cys	Gly	His	Asn	Leu	Phe	Cys	Met	Glu			
				485					490					495				
Cys	Ala	Val	Arg	Ile	Cys	Glu	Arg	Thr	Asp	Pro	Glu	Cys	Pro	Val	Cys			
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<210> 27  
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 <212> DNA  
 <213> Homo sapiens

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<400> 27
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<212> PRT
<213> Homo sapiens

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 35                40                45

Arg Asn Leu Asp Leu Glu Lys Ser Leu Gln Phe Leu Gln Gln Gln His
 50                55                60

Ser Glu Met Leu Ala Lys Leu His Glu Glu Ile Glu His Leu Lys Arg
 65                70                75                80

Glu Asn Lys Gly Glu Pro Ala Arg Gly Pro Arg Pro Ala Leu Pro Pro
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 <211> 3461  
 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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 Asp His Glu His His Ser Asp His Glu His His Ser Asp His Asp His  
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 His Ser His His Asn His Ala Ala Ser Gly Lys Asn Lys Arg Lys Ala  
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 Ser Gln Gly Lys Gly Ala His Arg Pro Glu His Ala Ser Gly Arg Arg  
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 Asn Val Lys Asp Ser Val Ser Ala Ser Glu Val Thr Ser Thr Val Tyr  
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 Ser Val Thr Ser Lys Ser Arg Val Ser Arg Leu Ala Gly Arg Lys Thr  
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 Ala Thr Gly Ile Phe Ile Gly His Tyr Ala Glu Asn Val Ser Met Trp  
 675 680 685  
 Ile Phe Ala Leu Thr Ala Gly Leu Phe Met Tyr Val Ala Leu Val Asp  
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 <212> DNA  
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 <212> PRT  
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<400> 32

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Pro	Glu	Ser	Pro	Val	Val	Gln	Leu	His	Ser	Asn	Phe	Thr	Ala	Val	Cys
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Ser	Val	Lys	Lys	Tyr	Ile	Leu	Glu	Trp	Cys	Val	Leu	Ser	Asp	Lys	Ala			
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Phe	Asn	Lys	Arg	Asp	Leu	Ile	Lys	Lys	His	Ile	Trp	Pro	Asn	Val	Pro			
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Pro	Glu	Asp	Leu	Lys	Ser	Leu	Asp	Leu	Phe	Lys	Lys	Glu	Lys	Ile	Asn			
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Thr	Ser	Ser	Thr	Val	Gln	Tyr	Ser	Thr	Val	Val	His	Ser	Gly	Tyr	Arg			
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 Gln Asn Cys Ser Gln His Glu Ser Ser Pro Asp Ile Ser His Phe Glu  
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 Arg Ser Lys Gln Val Ser Ser Val Asn Glu Glu Asp Phe Val Arg Leu  
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 Lys Gln Gln Ile Ser Asp His Ile Ser Gln Ser Cys Gly Ser Gly Gln  
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 Met Lys Met Phe Gln Glu Val Ser Ala Ala Asp Ala Phe Gly Pro Gly  
 865 870 875 880  
 Thr Glu Gly Gln Val Glu Arg Phe Glu Thr Val Gly Met Glu Ala Ala  
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 Ala Phe Gly Thr Ser Cys Ser Val Val Leu Tyr Asp Pro Leu Lys Arg  
 35 40 45  
 Val Val Val Thr Asn Leu Asn Gly His Thr Ala Arg Val Asn Cys Ile  
 50 55 60  
 Gln Trp Ile Cys Lys Gln Asp Gly Ser Pro Ser Thr Glu Leu Val Ser  
 65 70 75 80  
 Gly Gly Ser Asp Asn Gln Val Ile His Trp Glu Ile Glu Asp Asn Gln  
 85 90 95  
 Leu Leu Lys Ala Val His Leu Gln Gly His Glu Gly Pro Val Tyr Ala  
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 Val His Ala Val Tyr Gln Arg Arg Thr Ser Asp Pro Ala Leu Cys Thr  
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Lys	Ser	Thr	Ser	Leu	Glu	Thr	Gln	Asp	Asp	Asp	Asn	Ile	Arg	Leu	Lys	
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Cys	Ile	Glu	His	Asn	Ile	Gly	Pro	Cys	Ser	Ser	Val	Leu	Asp	Val	Gly		
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 <213> Homo sapiens

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His Gly Val Ile Thr Glu Asn Asn Asp Thr Val Ile Leu Asp Pro Pro
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Leu Val Ala Leu Asp Lys Asp Ala Pro Val Pro Phe Ala Gly Glu Ile
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Cys Ala Phe Lys Ile His Gly Gln Glu Leu Pro Phe Glu Ala Val Val
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Leu Asn Lys Thr Ser Gly Glu Gly Arg Leu Arg Ala Lys Ser Pro Ile
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Asp Cys Glu Leu Gln Lys Glu Tyr Thr Phe Ile Ile Gln Ala Tyr Asp
    115                      120                      125

Cys Gly Ala Gly Pro His Glu Thr Ala Trp Lys Lys Ser His Lys Ala
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Val Val His Ile Gln Val Lys Asp Val Asn Glu Phe Ala Pro Thr Phe
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Ser	Gln	Ile	Cys	Asn	Tyr	Glu	Ile	Val	Thr	Thr	Asp	Val	Pro	Phe	Ala	
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Lys	Gln	His	Gln	Tyr	Glu	Ile	Leu	Val	Thr	Ala	Tyr	Asp	Cys	Gly	Gln	
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Cys	Lys	Pro	Gly	Trp	Gln	Asp	Trp	Thr	Lys	Arg	Ile	Glu	Tyr	Gln	Pro	
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Gln	Lys	Leu	Cys	Gly	Ala	Ser	Ser	Gly	Ile	Ile	Asp	Leu	Leu	Pro	Ser	
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Tyr	Val	His	Asn	Cys	Arg	Leu	Val	Phe	Leu	Leu	Arg	Lys	Asp	Phe	Asp	
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Gln	Ala	Asp	Thr	Phe	Arg	Pro	Ala	Glu	Phe	His	Trp	Lys	Leu	Asp	Gln	
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Glu	Gly	Met	Gly	Arg	Gly	Arg	His	Gly	Gln	Asn	Gly	Ala	Arg	Gln	Ala			
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 <212> DNA  
 <213> Homo sapiens

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 Asp Leu Tyr Asn Gly Met Cys Leu Gln Gly Pro Ala Gly Val Pro Gly  
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 Pro Gly Arg Asp Gly Phe Lys Gly Glu Lys Gly Glu Cys Leu Arg Glu  
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 Ser Phe Glu Glu Ser Trp Thr Pro Asn Tyr Lys Gln Cys Ser Trp Ser  
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 Ser Leu Asn Tyr Gly Ile Asp Leu Gly Lys Ile Ala Glu Cys Thr Phe  
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 Thr Lys Met Arg Ser Asn Ser Ala Leu Arg Val Leu Phe Ser Gly Ser  
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 Leu Arg Leu Lys Cys Arg Asn Ala Cys Cys Gln Arg Trp Tyr Phe Thr  
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 Phe Asn Gly Ala Glu Cys Ser Gly Pro Leu Pro Ile Glu Ala Ile Ile  
                   165                  170                  175  
 Tyr Leu Asp Gln Gly Ser Pro Glu Met Asn Ser Thr Ile Asn Ile His  
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 Arg Thr Ser Ser Val Glu Gly Leu Cys Glu Gly Ile Gly Ala Gly Leu  
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 <212> DNA  
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<400> 39

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<211> 622

<212> PRT

<213> Homo sapiens

<400> 40

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65					70					75					80			
Gly	Gly	Pro	Asn	Ser	Cys	His	Phe	Gly	Lys	Gln	Tyr	Thr	Ser	Met	Trp			
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Arg	Thr	Tyr	Ile	Met	Met	Val	Asn	Ala	Thr	Asn	Gln	Met	Gly	Ser	Ser			
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Val	Ala	Val	Leu	Ser	Ala	Val	Ile	Cys	Leu	Ile	Ile	Val	Trp	Ala	Val			
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Ser	Asp	Tyr	Glu	Asp	Leu	Leu	Val	Glu	Tyr	Leu	Glu	Val	Asp	Asp	Ser			
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Glu	Asp	Gln	His	Leu	Met	Ser	Val	His	Ser	Lys	Glu	His	Pro	Ser	Gln			
				325					330					335				
Gly	Met	Lys	Pro	Thr	Tyr	Leu	Asp	Pro	Asp	Thr	Asp	Ser	Gly	Arg	Gly			
			340					345					350					



Ser Cys Asp Ser Pro Ser Leu Leu Ser Glu Lys Cys Glu Glu Pro Gln  
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 Ala Asn Pro Ser Thr Phe Tyr Asp Pro Glu Val Ile Glu Lys Pro Glu  
 370 375 380  
 Asn Pro Glu Thr Thr His Thr Trp Asp Pro Gln Cys Ile Ser Met Glu  
 385 390 395 400  
 Gly Lys Ile Pro Tyr Phe His Ala Gly Gly Ser Lys Cys Ser Thr Trp  
 405 410 415  
 Pro Leu Pro Gln Pro Ser Gln His Asn Pro Arg Ser Ser Tyr His Asn  
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 450 455 460  
 Ile Lys Ser Arg Glu Glu Gly Lys Ala Thr Gln Gln Arg Glu Val Glu  
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 Ser Phe His Ser Glu Thr Asp Gln Asp Thr Pro Trp Leu Leu Pro Gln  
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 Glu Lys Thr Pro Phe Gly Ser Ala Lys Pro Leu Asp Tyr Val Glu Ile  
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 His Lys Val Asn Lys Asp Gly Ala Leu Ser Leu Leu Pro Lys Gln Arg  
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 Glu Asn Ser Gly Lys Pro Lys Lys Pro Gly Thr Pro Glu Asn Asn Lys  
 530 535 540  
 Glu Tyr Ala Lys Val Ser Gly Val Met Asp Asn Asn Ile Leu Val Leu  
 545 550 555 560  
 Val Pro Asp Pro His Ala Lys Asn Val Ala Cys Phe Glu Glu Ser Ala  
 565 570 575  
 Lys Glu Ala Pro Pro Ser Leu Glu Gln Asn Gln Ala Glu Lys Ala Leu  
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 Ala Asn Phe Thr Ala Thr Ser Ser Lys Cys Arg Leu Gln Leu Gly Gly  
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<210> 41  
 <211> 1572  
 <212> DNA  
 <213> Homo sapiens

<400> 41  
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gtcagcaccg ggatggtggc cgcctccttc tcacaagagg tttctcatat gtacgtcgcc 360
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<210> 42  
 <211> 523  
 <212> PRT  
 <213> Homo sapiens

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Phe Val Glu Val Phe Thr Tyr Gly Ile Ile Lys Thr Phe Gly Val Phe
      35                40              45

Phe Asn Asp Leu Met Asp Ser Phe Asn Glu Ser Asn Ser Arg Ile Ser
      50                55              60

Trp Ile Ile Ser Ile Cys Val Phe Val Leu Thr Phe Ser Ala Pro Leu
      65                70              75              80

Ala Thr Val Leu Ser Asn Arg Phe Gly His Arg Leu Val Val Met Leu
      85                90              95

Gly Gly Leu Leu Val Ser Thr Gly Met Val Ala Ala Ser Phe Ser Gln
      100               105             110

Glu Val Ser His Met Tyr Val Ala Ile Gly Ile Ile Ser Gly Leu Gly
      115             120             125

Tyr Cys Phe Ser Phe Leu Pro Thr Val Thr Ile Leu Ser Gln Tyr Phe
      130             135             140

Gly Lys Arg Arg Ser Ile Val Thr Ala Val Ala Ser Thr Gly Glu Cys
      145             150             155             160

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Ile	Gly	Trp	Arg	Tyr	Ser	Leu	Leu	Phe	Val	Gly	Leu	Leu	Gln	Leu	Asn	
			180					185					190			
Ile	Val	Ile	Phe	Gly	Ala	Leu	Leu	Arg	Pro	Ile	Phe	Ile	Arg	Gly	Pro	
		195					200					205				
Ala	Ser	Pro	Lys	Ile	Val	Ile	Gln	Glu	Asn	Arg	Lys	Glu	Ala	Gln	Tyr	
	210					215					220					
Met	Leu	Glu	Asn	Glu	Lys	Thr	Arg	Thr	Ser	Ile	Asp	Ser	Ile	Asp	Ser	
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Gly	Val	Glu	Leu	Thr	Thr	Ser	Pro	Lys	Asn	Val	Pro	Thr	His	Thr	Asn	
				245					250					255		
Leu	Glu	Leu	Glu	Pro	Lys	Ala	Asp	Met	Gln	Gln	Val	Leu	Val	Lys	Thr	
			260					265					270			
Ser	Pro	Arg	Pro	Ser	Glu	Lys	Lys	Ala	Pro	Leu	Leu	Asp	Phe	Ser	Ile	
		275					280					285				
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	290					295					300					
Thr	Leu	Gly	Phe	Phe	Ala	Pro	Ser	Leu	Tyr	Ile	Ile	Pro	Leu	Gly	Ile	
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Ser	Leu	Gly	Ile	Asp	Gln	Asp	Arg	Ala	Ala	Phe	Leu	Leu	Ser	Thr	Met	
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Ala	Ile	Ala	Glu	Val	Phe	Gly	Arg	Ile	Gly	Ala	Gly	Phe	Val	Leu	Asn	
			340					345					350			
Arg	Glu	Pro	Ile	Arg	Lys	Ile	Tyr	Ile	Glu	Leu	Ile	Cys	Val	Ile	Leu	
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Leu	Thr	Val	Ser	Leu	Phe	Ala	Phe	Thr	Phe	Ala	Thr	Glu	Phe	Trp	Gly	
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				405					410					415		
Lys	Met	Ser	Ser	Ala	Ala	Gly	Val	Tyr	Ile	Phe	Ile	Gln	Ser	Ile	Ala	
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	450					455					460					
Ala	Val	Cys	Leu	Ala	Leu	Val	Arg	Pro	Cys	Lys	Met	Gly	Leu	Cys	Gln	
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His His His Ser Gly Glu Thr Lys Val Val Ser His Arg Gly Lys Thr  
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Leu Gln Asp Ile Pro Glu Asp Phe Leu Glu Met Asp Leu Ala Lys Asn  
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Glu His Arg Val His Val Gln Met Glu Pro Val  
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<210> 43

<211> 3690

<212> DNA

<213> Homo sapiens

<400> 43

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<210> 44  
 <211> 582  
 <212> PRT  
 <213> Homo sapiens

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His Thr Ser Arg Gly Arg Gly Ser Asp Arg Glu Arg Glu Ser Arg Pro
          35                      40                      45

Glu Ala Ala Gly Leu Leu Trp Asp Arg Ala Ala Ala Gly Glu Ala Glu
          50                      55                      60

Lys Gly Asn Arg Gly Glu Pro Pro Ala Trp Ile Arg Ala Gln Gln Gln
          65                      70                      75                      80

Pro Arg Pro Pro Pro Ala Gly Gln Ala Pro Gly Thr Ala Ala Gly Gly
          85                      90                      95

Ala Gln Asp Pro Arg Leu Arg Pro Gly Arg Ser Arg Gly Arg Val Arg
          100                      105                      110

Leu Pro Val Lys Pro Pro Glu Ala Ser Gly Arg Gln Pro Arg Gly Pro
          115                      120                      125

Ser Asp Cys Ile Pro Arg Phe Pro Ser Ala Ser Ala Thr His Lys Ala
          130                      135                      140

Val Pro Lys Gly Thr Gly Pro Pro Ala Glu Asp Gly Asp Gly Leu Gly
          145                      150                      155                      160

Ala Pro Gly Pro Arg Ala Arg Arg Arg Arg Leu Leu Gly Val Ala Ala
          165                      170                      175

Glu Gly Ser Gly Pro Arg Gly Lys Arg Arg Gly Thr Val Ser Asp Glu
          180                      185                      190

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Ala	Ala	Arg	Pro	Ser	Pro	His	Pro	Gly	Thr	Pro	Leu	Arg	Ser	Cys	Ser	225	230	235
Cys	Cys	Trp	Leu	Arg	Cys	Trp	Arg	Arg	Gly	Arg	Gly	Pro	Ser	Gly	Glu	245	250	255
Tyr	Cys	His	Gly	Trp	Leu	Asp	Ala	Gln	Gly	Val	Trp	Arg	Ile	Gly	Phe	260	265	270
Gln	Cys	Pro	Glu	Arg	Phe	Asp	Gly	Gly	Asp	Ala	Thr	Ile	Cys	Cys	Gly	275	280	285
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Trp	Gln	Arg	Cys	Ser	Pro	Glu	Gly	Ser	Pro	Lys	Gly	Arg	Gln	Leu	Leu	355	360	365
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Ile	Leu	Gly	Ser	Leu	Val	Ala	Ala	Cys	Cys	Cys	Arg	Cys	Leu	Arg	Pro	420	425	430
Lys	Gln	Asp	Pro	Gln	Gln	Ser	Arg	Ala	Pro	Gly	Gly	Asn	Arg	Leu	Met	435	440	445
Glu	Thr	Ile	Pro	Met	Ile	Pro	Ser	Ala	Ser	Thr	Ser	Arg	Gly	Ser	Ser	450	455	460
Ser	Arg	Gln	Ser	Ser	Thr	Ala	Ala	Ser	Ser	Ser	Ser	Ser	Ala	Asn	Ser	465	470	475
Gly	Ala	Arg	Ala	Pro	Pro	Thr	Arg	Ser	Gln	Thr	Asn	Cys	Cys	Leu	Pro	485	490	495
Glu	Gly	Thr	Met	Asn	Asn	Val	Tyr	Val	Asn	Met	Pro	Thr	Asn	Phe	Ser	500	505	510



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Tyr	Leu	His	Pro	Pro	Tyr	Val	Gly	Tyr	Thr	Val	Gln	His	Asp	Ser	Val
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Pro	Met	Thr	Ala	Val	Pro	Pro	Phe	Met	Asp	Gly	Leu	Gln	Pro	Gly	Tyr
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Arg	Gln	Ile	Gln	Ser	Pro	Phe	Pro	His	Thr	Asn	Ser	Glu	Gln	Lys	Met
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580															

<210> 45  
 <211> 3857  
 <212> DNA  
 <213> Homo sapiens

<400> 45

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<210> 48  
 <211> 1382  
 <212> PRT  
 <213> Homo sapiens

<400> 48

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			20					25					30		
Tyr	Lys	Thr	Tyr	Thr	Leu	Gln	Asp	Gly	Pro	Trp	Ser	Gln	Gln	Glu	Arg
		35					40					45			
Asn	Pro	Glu	Ala	Pro	Gly	Arg	Ala	Ala	Val	Pro	Pro	Trp	Gly	Lys	Tyr
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Asp	Ala	Ala	Leu	Arg	Thr	Met	Ile	Pro	Phe	Arg	Pro	Lys	Pro	Arg	Phe
65					70				75						80
Pro	Ala	Pro	Gln	Pro	Leu	Asp	Asn	Ala	Gly	Leu	Phe	Ser	Tyr	Leu	Thr
				85					90					95	
Val	Ser	Trp	Leu	Thr	Pro	Leu	Met	Ile	Gln	Ser	Leu	Arg	Ser	Arg	Leu
			100					105					110		
Asp	Glu	Asn	Thr	Ile	Pro	Pro	Leu	Ser	Val	His	Asp	Ala	Ser	Asp	Lys
		115					120					125			
Asn	Val	Gln	Arg	Leu	His	Arg	Leu	Trp	Glu	Glu	Glu	Val	Ser	Arg	Arg
	130					135						140			
Gly	Ile	Glu	Lys	Ala	Ser	Val	Leu	Leu	Val	Met	Leu	Arg	Phe	Gln	Arg
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Thr	Arg	Leu	Ile	Phe	Asp	Ala	Leu	Leu	Gly	Ile	Cys	Phe	Cys	Ile	Ala
				165					170					175	
Ser	Val	Leu	Gly	Pro	Ile	Leu	Ile	Ile	Pro	Lys	Ile	Leu	Glu	Tyr	Ser
			180					185					190		
Glu	Glu	Gln	Leu	Gly	Asn	Val	Val	His	Gly	Val	Gly	Leu	Cys	Phe	Ala
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Leu	Phe	Leu	Ser	Glu	Cys	Val	Lys	Ser	Leu	Ser	Phe	Ser	Ser	Ser	Trp
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Ile	Ile	Asn	Gln	Arg	Thr	Ala	Ile	Arg	Phe	Arg	Ala	Ala	Val	Ser	Ser
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Phe	Ala	Phe	Glu	Lys	Leu	Ile	Gln	Phe	Lys	Ser	Val	Ile	His	Ile	Thr
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Ser	Gly	Glu	Ala	Ile	Ser	Phe	Phe	Thr	Gly	Asp	Val	Asn	Tyr	Leu	Phe
			260					265					270		
Glu	Gly	Val	Cys	Tyr	Gly	Pro	Leu	Val	Leu	Ile	Thr	Cys	Ala	Ser	Leu
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Val	Ile	Cys	Ser	Ile	Ser	Ser	Tyr	Phe	Ile	Ile	Gly	Tyr	Thr	Ala	Phe
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305					310					315					320

Thr	Arg	Met	Ala	Val	Lys	Ala	Gln	His	His	Thr	Ser	Glu	Val	Ser	Asp	
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Gln	Arg	Ile	Arg	Val	Thr	Ser	Glu	Val	Leu	Thr	Cys	Ile	Lys	Leu	Ile	
			340					345					350			
Lys	Met	Tyr	Thr	Trp	Glu	Lys	Pro	Phe	Ala	Lys	Ile	Ile	Glu	Asp	Leu	
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Arg	Arg	Lys	Glu	Arg	Lys	Leu	Leu	Glu	Lys	Cys	Gly	Leu	Val	Gln	Ser	
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Leu	Thr	Ser	Ile	Thr	Leu	Phe	Ile	Ile	Pro	Thr	Val	Ala	Thr	Ala	Val	
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Trp	Val	Leu	Ile	His	Thr	Ser	Leu	Lys	Leu	Lys	Leu	Thr	Ala	Ser	Met	
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Ala	Phe	Ser	Met	Leu	Ala	Ser	Leu	Asn	Leu	Leu	Arg	Leu	Ser	Val	Phe	
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Phe	Val	Pro	Ile	Ala	Val	Lys	Gly	Leu	Thr	Asn	Ser	Lys	Ser	Ala	Val	
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Met	Arg	Phe	Lys	Lys	Phe	Phe	Leu	Gln	Glu	Ser	Pro	Val	Phe	Tyr	Val	
	450					455					460					
Gln	Thr	Leu	Gln	Asp	Pro	Ser	Lys	Ala	Leu	Val	Phe	Glu	Glu	Ala	Thr	
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Leu	Ser	Trp	Gln	Gln	Thr	Cys	Pro	Gly	Ile	Val	Asn	Gly	Ala	Leu	Glu	
			485						490					495		
Leu	Glu	Arg	Asn	Gly	His	Ala	Ser	Glu	Gly	Met	Thr	Arg	Pro	Arg	Asp	
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Asn	Thr	Gly	Ser	Gly	Lys	Ser	Ser	Leu	Leu	Ser	Ala	Ile	Leu	Glu	Glu	
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Met	His	Leu	Leu	Glu	Gly	Ser	Val	Gly	Val	Gln	Gly	Ser	Leu	Ala	Tyr	
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Val	Pro	Gln	Gln	Ala	Trp	Ile	Val	Ser	Gly	Asn	Ile	Arg	Glu	Asn	Ile	
			580					585					590			
Leu	Met	Gly	Gly	Ala	Tyr	Asp	Lys	Ala	Arg	Tyr	Leu	Gln	Val	Leu	His	
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Cys	Cys	Ser	Leu	Asn	Arg	Asp	Leu	Glu	Leu	Leu	Pro	Phe	Gly	Asp	Met	
	610					615					620					
Thr	Glu	Ile	Gly	Glu	Arg	Gly	Leu	Asn	Leu	Ser	Gly	Gly	Gln	Lys	Gln	
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Arg	Ile	Ser	Leu	Ala	Arg	Ala	Val	Tyr	Ser	Asp	Arg	Gln	Ile	Tyr	Leu	
				645					650					655		
Leu	Asp	Asp	Pro	Leu	Ser	Ala	Val	Asp	Ala	His	Val	Gly	Lys	His	Ile	
			660					665					670			
Phe	Glu	Glu	Cys	Ile	Lys	Lys	Thr	Leu	Arg	Gly	Lys	Thr	Val	Val	Leu	
		675					680					685				
Val	Thr	His	Gln	Leu	Gln	Tyr	Leu	Glu	Phe	Cys	Gly	Gln	Ile	Ile	Leu	
	690					695					700					
Leu	Glu	Asn	Gly	Lys	Ile	Cys	Glu	Asn	Gly	Thr	His	Ser	Glu	Leu	Met	
705					710					715					720	
Gln	Lys	Lys	Gly	Lys	Tyr	Ala	Gln	Leu	Ile	Gln	Lys	Met	His	Lys	Glu	
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Ala	Thr	Ser	Asp	Met	Leu	Gln	Asp	Thr	Ala	Lys	Ile	Ala	Glu	Lys	Pro	
			740					745					750			
Lys	Val	Glu	Ser	Gln	Ala	Leu	Ala	Thr	Ser	Leu	Glu	Glu	Ser	Leu	Asn	
		755					760					765				
Gly	Asn	Ala	Val	Pro	Glu	His	Gln	Leu	Thr	Gln	Glu	Glu	Glu	Met	Glu	
	770					775					780					
Glu	Gly	Ser	Leu	Ser	Trp	Arg	Val	Tyr	His	His	Tyr	Ile	Gln	Ala	Ala	
785					790					795					800	
Gly	Gly	Tyr	Met	Val	Ser	Cys	Ile	Ile	Phe	Phe	Phe	Val	Val	Leu	Ile	
				805					810					815		
Val	Phe	Leu	Thr	Ile	Phe	Ser	Phe	Trp	Trp	Leu	Ser	Tyr	Trp	Leu	Glu	
			820					825					830			
Gln	Gly	Ser	Gly	Thr	Asn	Ser	Ser	Arg	Glu	Ser	Asn	Gly	Thr	Met	Ala	
		835					840					845				
Asp	Leu	Gly	Asn	Ile	Ala	Asp	Asn	Pro	Gln	Leu	Ser	Phe	Tyr	Gln	Leu	
	850					855					860					
Val	Tyr	Gly	Leu	Asn	Ala	Leu	Leu	Leu	Ile	Cys	Val	Gly	Val	Cys	Ser	
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Ser	Gly	Ile	Phe	Thr	Lys	Val	Thr	Arg	Lys	Ala	Ser	Thr	Ala	Leu	His	
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Asn	Lys	Leu	Phe	Asn	Lys	Val	Phe	Arg	Cys	Pro	Met	Ser	Phe	Phe	Asp	
			900					905					910			
Thr	Ile	Pro	Ile	Gly	Arg	Leu	Leu	Asn	Cys	Phe	Ala	Gly	Asp	Leu	Glu	
		915					920					925				
Gln	Leu	Asp	Gln	Leu	Leu	Pro	Ile	Phe	Ser	Glu	Gln	Phe	Leu	Val	Leu	
	930					935					940					
Ser	Leu	Met	Val	Ile	Ala	Val	Leu	Leu	Ile	Val	Ser	Val	Leu	Ser	Pro	
945					950					955					960	

Tyr Ile Leu Leu Met Gly Ala Ile Ile Met Val Ile Cys Phe Ile Tyr  
 965 970 975  
 Tyr Met Met Phe Lys Lys Ala Ile Gly Val Phe Lys Arg Leu Glu Asn  
 980 985 990  
 Tyr Ser Arg Ser Pro Leu Phe Ser His Ile Leu Asn Ser Leu Gln Gly  
 995 1000 1005  
 Leu Ser Ser Ile His Val Tyr Gly Lys Thr Glu Asp Phe Ile Ser Gln  
 1010 1015 1020  
 Phe Lys Arg Leu Thr Asp Ala Gln Asn Asn Tyr Leu Leu Leu Phe Leu  
 1025 1030 1035 1040  
 Ser Ser Thr Arg Trp Met Ala Leu Arg Leu Glu Ile Met Thr Asn Leu  
 1045 1050 1055  
 Val Thr Leu Ala Val Ala Leu Phe Val Ala Phe Gly Ile Ser Ser Thr  
 1060 1065 1070  
 Pro Tyr Ser Phe Lys Val Met Ala Val Asn Ile Val Leu Gln Leu Ala  
 1075 1080 1085  
 Ser Ser Phe Gln Ala Thr Ala Arg Ile Gly Leu Glu Thr Glu Ala Gln  
 1090 1095 1100  
 Phe Thr Ala Val Glu Arg Ile Leu Gln Tyr Met Lys Met Cys Val Ser  
 1105 1110 1115 1120  
 Glu Ala Pro Leu His Met Glu Gly Thr Ser Cys Pro Gln Gly Trp Pro  
 1125 1130 1135  
 Gln His Gly Glu Ile Ile Phe Gln Asp Tyr His Met Lys Tyr Arg Asp  
 1140 1145 1150  
 Asn Thr Pro Thr Val Leu His Gly Ile Asn Leu Thr Ile Arg Gly His  
 1155 1160 1165  
 Glu Val Val Gly Ile Val Gly Arg Thr Gly Ser Gly Lys Ser Ser Leu  
 1170 1175 1180  
 Gly Met Ala Leu Phe Arg Leu Val Glu Pro Met Ala Gly Arg Ile Leu  
 1185 1190 1195 1200  
 Ile Asp Gly Val Asp Ile Cys Ser Ile Gly Leu Glu Asp Leu Arg Ser  
 1205 1210 1215  
 Lys Leu Ser Val Ile Pro Gln Asp Pro Val Leu Leu Ser Gly Thr Ile  
 1220 1225 1230  
 Arg Phe Asn Leu Asp Pro Phe Asp Arg His Thr Asp Gln Gln Ile Trp  
 1235 1240 1245  
 Asp Ala Leu Glu Arg Thr Phe Leu Thr Lys Ala Ile Ser Lys Phe Pro  
 1250 1255 1260  
 Lys Lys Leu His Thr Asp Val Val Glu Asn Gly Gly Asn Phe Ser Val  
 1265 1270 1275 1280

Gly Glu Arg Gln Leu Leu Cys Ile Ala Arg Ala Val Leu Arg Asn Ser  
 1285 1290 1295  
 Lys Ile Ile Leu Ile Asp Glu Ala Thr Ala Ser Ile Asp Met Glu Thr  
 1300 1305 1310  
 Asp Thr Leu Ile Gln Arg Thr Ile Arg Glu Ala Phe Gln Gly Cys Thr  
 1315 1320 1325  
 Val Leu Val Ile Ala His Arg Val Thr Thr Val Leu Asn Cys Asp His  
 1330 1335 1340  
 Ile Leu Val Met Gly Asn Gly Lys Val Val Glu Phe Asp Arg Pro Glu  
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<210> 49  
 <211> 2682  
 <212> DNA  
 <213> Homo sapiens

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 tgagtactg ccggtgaatg tgtccacagt tgagaggttg gagcaggatg agggaatcct 1920  
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<210> 50
<211> 240
<212> PRT
<213> Homo sapiens

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Gly Leu Glu Ser Gly Gln Pro Leu Tyr Leu Leu Glu Leu Asn Trp Gly
          35                      40                      45

Gly Thr Glu Cys Ala Leu Ser Ser Thr Gly Arg Thr Ala Ala Cys Phe
  50                      55                      60

Leu Pro Ile Ser Leu Leu Pro Thr Ser Pro Ala Ala Trp Leu Gly Pro
  65                      70                      75                      80

Glu Ala Leu Cys Leu Pro Gly Arg Pro Gly Thr Thr Gly Leu Arg Asp
          85                      90                      95

Thr Gly Gly Pro Leu Leu Leu Pro Pro Pro Thr Leu Leu Gln Asp Thr
          100                      105                      110

Thr Arg Trp Cys Trp Met Leu Val Leu Trp Pro Ala Lys Val His Gly
          115                      120                      125

Asp Ser Pro His Gly Ile Leu Arg Asp Gln Ala Ala Gly Ile Gly Lys
          130                      135                      140

Glu Phe His Pro Asp His Cys Pro Ser Gln Val Pro Arg Arg Pro His
          145                      150                      155                      160

His Thr Pro Phe Gln Gly Gln Gly Ser Ser Lys Pro Arg Ala Arg Ile
          165                      170                      175

Leu Cys Cys Cys Leu Val Glu Ser Leu Pro Pro Cys Val Gly Ser Val
          180                      185                      190

Gly Gln Ala Glu Cys Ile Gly Asp Arg Ala Val Ser Met Gly Leu Gly
          195                      200                      205

Val Cys Glu Leu Arg Pro Arg Cys Ala Val Trp Arg Arg Val Leu Ser
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<210> 51  
 <211> 1194  
 <212> DNA  
 <213> Homo sapiens

<400> 51

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tcgtacacca	caatgtgcat	caaggagacg	tgccgattga	ttcctgcagt	cccgtccatt	240
tccagagatc	tcagcaagcc	acttaccttc	ccagatggat	gcacattgcc	tgcagggatc	300
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aatagttttc	agaattatgc	aagtaataag	tgcattgtatg	ctcactgtca	aaaattccca	960
acactagaaa	atcatgtaga	ataaaaattt	taaatctcac	ttcacttagc	cgacattcca	1020
tgccctgacc	aatcctactg	cttttcctaa	aaacagaata	atttggtgtg	cattctttca	1080
gactttttcc	tatacatttt	atatgtagaa	atgtagcaat	gtatttgtat	agatgtgatc	1140
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<210> 52  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<400> 52

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			20					25					30		
Asp	Gly	Cys	Thr	Leu	Pro	Ala	Gly	Ile	Thr	Val	Val	Leu	Ser	Ile	Trp
		35					40					45			
Gly	Leu	His	His	Asn	Pro	Ala	Val	Trp	Lys	Asn	Pro	Lys	Val	Phe	Asp
	50					55					60				
Pro	Leu	Arg	Phe	Ser	Gln	Glu	Asn	Ser	Asp	Gln	Arg	His	Pro	Tyr	Ala
	65				70					75					80
Tyr	Leu	Pro	Phe	Ser	Ala	Gly	Ser	Arg	Asn	Cys	Ile	Gly	Gln	Glu	Phe
				85					90					95	
Ala	Met	Ile	Glu	Leu	Lys	Val	Thr	Ile	Ala	Leu	Ile	Leu	Leu	His	Phe
				100				105					110		

Arg Val Thr Pro Asp Pro Thr Arg Pro Leu Thr Phe Pro Asn His Phe  
115 120 125

Ile Leu Lys Pro Lys Asn Gly Met Tyr Leu His Leu Lys Lys Leu Ser  
130 135 140

Glu Cys  
145

<210> 53  
<211> 1533  
<212> DNA  
<213> Homo sapiens

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actgtggtgc tggggccagga cgcaaaactg ccctgcttct accgagggga ctccggcgag 180  
caagtggggc aagtggcatg ggctcgggtg gacgcgggcg aaggcgccca ggaactagcg 240  
ctactgcact ccaaatacgg gcttcatgtg agcccggctt acgagggccg cgtggagcag 300  
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<210> 54  
<211> 510  
<212> PRT  
<213> Homo sapiens

<400> 54  
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Glu Leu Glu Thr Ser Asp Val Val Thr Val Val Leu Gly Gln Asp Ala  
35 40 45  
Lys Leu Pro Cys Phe Tyr Arg Gly Asp Ser Gly Glu Gln Val Gly Gln  
50 55 60

Val 65	Ala	Trp	Ala	Arg	Val 70	Asp	Ala	Gly	Glu	Gly 75	Ala	Gln	Glu	Leu	Ala 80
Leu	Leu	His	Ser	Lys 85	Tyr	Gly	Leu	His	Val 90	Ser	Pro	Ala	Tyr	Glu 95	Gly
Arg	Val	Glu	Gln 100	Pro	Pro	Pro	Pro	Arg 105	Asn	Pro	Leu	Asp	Gly 110	Ser	Val
Leu	Leu	Arg 115	Asn	Ala	Val	Gln	Ala 120	Asp	Glu	Gly	Glu	Tyr	Glu 125	Cys	Arg
Val 130	Ser	Thr	Phe	Pro	Ala	Gly 135	Ser	Phe	Gln	Ala	Arg 140	Leu	Arg	Leu	Arg
Val 145	Leu	Val	Pro	Pro	Leu 150	Pro	Ser	Leu	Asn	Pro 155	Gly	Pro	Ala	Leu	Glu 160
Glu	Gly	Gln	Gly 165	Leu	Thr	Leu	Ala	Ala	Ser 170	Cys	Thr	Ala	Glu	Gly 175	Ser
Pro	Ala	Pro	Ser 180	Val	Thr	Trp	Asp	Thr 185	Glu	Val	Lys	Gly	Thr 190	Thr	Ser
Ser	Arg	Ser	Phe 195	Lys	His	Ser	Arg 200	Ser	Ala	Ala	Val 205	Thr	Ser	Glu	Phe
His 210	Leu	Val	Pro	Ser	Arg	Ser 215	Met	Asn	Gly	Gln 220	Pro	Leu	Thr	Cys	Val
Val 225	Ser	His	Pro	Gly	Leu 230	Leu	Gln	Asp	Gln	Arg 235	Ile	Thr	His	Ile	Leu 240
His	Val	Ser	Phe 245	Leu	Ala	Glu	Ala	Ser 250	Val	Arg	Gly	Leu	Glu	Asp 255	Gln
Asn	Leu	Trp	His 260	Ile	Gly	Arg	Glu	Gly 265	Ala	Met	Leu	Lys	Cys 270	Leu	Ser
Glu	Gly	Gln 275	Pro	Pro	Pro	Ser	Tyr 280	Asn	Trp	Thr	Arg	Leu 285	Asp	Gly	Pro
Leu 290	Pro	Ser	Gly	Val	Arg	Val 295	Asp	Gly	Asp	Thr	Leu 300	Gly	Phe	Pro	Pro
Leu 305	Thr	Thr	Glu	His	Ser 310	Gly	Ile	Tyr	Val	Cys 315	His	Val	Ser	Asn	Glu 320
Phe	Ser	Ser	Arg 325	Asp	Ser	Gln	Val	Thr 330	Val	Asp	Val	Leu	Asp 335	Pro	Gln
Glu	Asp	Ser	Gly 340	Lys	Gln	Val	Asp 345	Leu	Val	Ser	Ala	Ser	Val 350	Val	Val
Val 355	Gly	Val	Ile	Ala	Ala	Leu 360	Leu	Phe	Cys	Leu	Leu 365	Val	Val	Val	Val
Val 370	Leu	Met	Ser	Arg	Tyr	His 375	Arg	Arg	Lys	Ala	Gln 380	Gln	Met	Thr	Gln

Lys	Tyr	Glu	Glu	Glu	Leu	Thr	Leu	Thr	Arg	Glu	Asn	Ser	Ile	Arg	Arg	385	390	395	400
Leu	His	Ser	His	His	Thr	Asp	Pro	Arg	Ser	Gln	Pro	Glu	Glu	Ser	Val	405	410	415	
Gly	Leu	Arg	Ala	Glu	Gly	His	Pro	Asp	Ser	Leu	Lys	Asp	Asn	Ser	Ser	420	425	430	
Cys	Ser	Val	Met	Ser	Glu	Glu	Pro	Glu	Gly	Arg	Ser	Tyr	Ser	Thr	Leu	435	440	445	
Thr	Thr	Val	Arg	Glu	Ile	Glu	Thr	Gln	Thr	Glu	Leu	Leu	Ser	Pro	Gly	450	455	460	
Ser	Gly	Arg	Ala	Glu	Glu	Glu	Glu	Asp	Gln	Asp	Glu	Gly	Ile	Lys	Gln	465	470	475	480
Ala	Met	Asn	His	Phe	Val	Gln	Glu	Asn	Gly	Thr	Leu	Arg	Ala	Lys	Pro	485	490	495	
Thr	Gly	Asn	Gly	Ile	Tyr	Ile	Asn	Gly	Arg	Gly	His	Leu	Val			500	505	510	

<210> 55  
 <211> 2642  
 <212> DNA  
 <213> Homo sapiens

<400> 55

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tatgaccact	acttgatccc	aaacgccctg	ctggagctgg	ccctgctgct	tatggagcaa	1560
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tccatggagt	caaggacaca	ctttcgaatc	caggcagcca	cactccaagc	caagtcttcc	1680
ctagagaaca	gcagcagatc	catgggtctca	tcagtgtcct	tgtagctttg	tgacgagttt	1740
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<210> 56
<211> 550
<212> PRT
<213> Homo sapiens

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<400> 56
Met Thr Ala Leu Asp Leu Phe Leu Thr Asn Gln Phe Ser Glu Ala Leu
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Ser Tyr Leu Lys Pro Arg Thr Lys Glu Ser Met Tyr His Ser Leu Thr
          20             25             30

Tyr Ala Thr Ile Leu Glu Met Gln Ala Met Met Thr Phe Asp Pro Gln
      35             40             45

Asp Ile Leu Leu Ala Gly Asn Met Met Lys Glu Ala Gln Met Leu Cys
      50             55             60

Gln Arg His Arg Arg Lys Ser Ser Val Thr Asp Ser Phe Ser Ser Leu
      65             70             75             80

Val Asn Arg Pro Thr Leu Gly Gln Phe Thr Glu Glu Glu Ile His Ala
          85             90             95

Glu Val Cys Tyr Ala Glu Cys Leu Leu Gln Arg Ala Ala Leu Thr Phe
      100             105             110

Leu Gln Asp Glu Asn Met Val Ser Phe Ile Lys Gly Gly Ile Lys Val
      115             120             125

Arg Asn Ser Tyr Gln Thr Tyr Lys Glu Leu Asp Ser Leu Val Gln Ser
      130             135             140

Ser Gln Tyr Cys Lys Gly Glu Asn His Pro His Phe Glu Gly Gly Val
      145             150             155             160

Lys Leu Gly Val Gly Ala Phe Asn Leu Thr Leu Ser Met Leu Pro Thr
          165             170             175

Arg Ile Leu Arg Leu Leu Glu Phe Val Gly Phe Ser Gly Asn Lys Asp
          180             185             190

Tyr Gly Leu Leu Gln Leu Glu Glu Gly Ala Ser Gly His Ser Phe Arg
      195             200             205

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Ser	Val	Leu	Cys	Val	Met	Leu	Leu	Leu	Cys	Tyr	His	Thr	Phe	Leu	Thr
210						215					220				
Phe	Val	Leu	Gly	Thr	Gly	Asn	Val	Asn	Ile	Glu	Glu	Ala	Glu	Lys	Leu
225					230					235					240
Leu	Lys	Pro	Tyr	Leu	Asn	Arg	Tyr	Pro	Lys	Gly	Ala	Ile	Phe	Leu	Phe
				245					250					255	
Phe	Ala	Gly	Arg	Ile	Glu	Val	Ile	Lys	Gly	Asn	Ile	Asp	Ala	Ala	Ile
			260					265					270		
Arg	Arg	Phe	Glu	Glu	Cys	Cys	Glu	Ala	Gln	Gln	His	Trp	Lys	Gln	Phe
		275					280					285			
His	His	Met	Cys	Tyr	Trp	Glu	Leu	Met	Trp	Cys	Phe	Thr	Tyr	Lys	Gly
	290					295					300				
Gln	Trp	Lys	Met	Ser	Tyr	Phe	Tyr	Ala	Asp	Leu	Leu	Ser	Lys	Glu	Asn
305					310					315					320
Cys	Trp	Ser	Lys	Ala	Thr	Tyr	Ile	Tyr	Met	Lys	Ala	Ala	Tyr	Leu	Ser
				325					330					335	
Met	Phe	Gly	Lys	Glu	Asp	His	Lys	Pro	Phe	Gly	Asp	Asp	Glu	Val	Glu
			340					345					350		
Leu	Phe	Arg	Ala	Val	Pro	Gly	Leu	Lys	Leu	Lys	Ile	Ala	Gly	Lys	Ser
		355					360					365			
Leu	Pro	Thr	Glu	Lys	Phe	Ala	Ile	Arg	Lys	Ser	Arg	Arg	Tyr	Phe	Ser
	370					375					380				
Ser	Asn	Pro	Ile	Ser	Leu	Pro	Val	Pro	Ala	Leu	Glu	Met	Met	Tyr	Ile
385					390					395					400
Trp	Asn	Gly	Tyr	Ala	Val	Ile	Gly	Lys	Gln	Pro	Lys	Leu	Thr	Asp	Gly
				405					410					415	
Ile	Leu	Glu	Ile	Ile	Thr	Lys	Ala	Glu	Glu	Met	Leu	Glu	Lys	Gly	Pro
			420					425					430		
Glu	Asn	Glu	Tyr	Ser	Val	Asp	Asp	Glu	Cys	Leu	Val	Lys	Leu	Leu	Lys
		435					440					445			
Gly	Leu	Cys	Leu	Lys	Tyr	Leu	Gly	Arg	Val	Gln	Glu	Ala	Glu	Glu	Asn
	450					455					460				
Phe	Arg	Ser	Ile	Ser	Ala	Asn	Glu	Lys	Lys	Ile	Lys	Tyr	Asp	His	Tyr
465					470					475					480
Leu	Ile	Pro	Asn	Ala	Leu	Leu	Glu	Leu	Ala	Leu	Leu	Leu	Met	Glu	Gln
				485					490					495	
Asp	Arg	Asn	Glu	Glu	Ala	Ile	Lys	Leu	Leu	Glu	Ser	Ala	Lys	Gln	Asn
			500					505					510		
Tyr	Lys	Asn	Tyr	Ser	Met	Glu	Ser	Arg	Thr	His	Phe	Arg	Ile	Gln	Ala
		515					520					525			

Ala Thr Leu Gln Ala Lys Ser Ser Leu Glu Asn Ser Ser Arg Ser Met  
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Val Ser Ser Val Ser Leu  
545 550

<210> 57  
<211> 927  
<212> DNA  
<213> Homo sapiens

<400> 57  
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ttctcctcct cggcgccggt cctggcttcc gccgtgtccg cccagccccc gctgccggac 180  
cagtgcctcg cgctgtgca gtgctccgag gcagcgcgca cagtcaagtg cgttaaccgc 240  
aatctgaccg aggtgcccac ggacctgccc gcctacgtgc gcaacctctt ccttaccggc 300  
aaccagctgg ccagcaacca cttcctttac ctgccgcggg atgtgctggc ccaactgccc 360  
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cgcaacctga cacatctaga aagcctccac ctggaggaca atgccctcaa ggtccttcac 480  
aatggcaccc tggctgagtt gcaaggtcta cccacacatta gggttttcct ggacaacaat 540  
cctgggtct gcgactgcca catggcagac atgggtgacct ggctcaagga aacagaggta 600  
gtgcagggca aagaccggct cacctgtgca tatccggaaa aaatgaggaa tcgggtcctc 660  
ttggaactca acagtgtga cctggactgt gacccgatcc tcccccatc cctgcaaacc 720  
tcttatgtct tcctgggtat tggttttagcc ctgataggcg ctattttcct cctggttttg 780  
tatttgaacc gcaaggggat aaaaaagtgg atgcataaca tcagagatgc ctgcagggat 840  
cacatggaag ggtatcatta cagatatgaa atcaatgcgg accccagatt aacaaacctc 900  
agttctaact cggatgtcct cgagtga 927

<210> 58  
<211> 308  
<212> PRT  
<213> Homo sapiens

<400> 58  
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20 25 30  
Ser Pro Thr Ser Ser Ala Ser Ser Phe Ser Ser Ser Ala Pro Phe Leu  
35 40 45  
Ala Ser Ala Val Ser Ala Gln Pro Pro Leu Pro Asp Gln Cys Pro Ala  
50 55 60  
Leu Cys Glu Cys Ser Glu Ala Ala Arg Thr Val Lys Cys Val Asn Arg  
65 70 75 80  
Asn Leu Thr Glu Val Pro Thr Asp Leu Pro Ala Tyr Val Arg Asn Leu  
85 90 95  
Phe Leu Thr Gly Asn Gln Leu Ala Ser Asn His Phe Leu Tyr Leu Pro  
100 105 110  
Arg Asp Val Leu Ala Gln Leu Pro Ser Leu Arg His Leu Asp Leu Ser  
115 120 125

Asn Asn Ser Leu Val Ser Leu Thr Tyr Val Ser Phe Arg Asn Leu Thr  
 130 135 140  
 His Leu Glu Ser Leu His Leu Glu Asp Asn Ala Leu Lys Val Leu His  
 145 150 155 160  
 Asn Gly Thr Leu Ala Glu Leu Gln Gly Leu Pro His Ile Arg Val Phe  
 165 170 175  
 Leu Asp Asn Asn Pro Trp Val Cys Asp Cys His Met Ala Asp Met Val  
 180 185 190  
 Thr Trp Leu Lys Glu Thr Glu Val Val Gln Gly Lys Asp Arg Leu Thr  
 195 200 205  
 Cys Ala Tyr Pro Glu Lys Met Arg Asn Arg Val Leu Leu Glu Leu Asn  
 210 215 220  
 Ser Ala Asp Leu Asp Cys Asp Pro Ile Leu Pro Pro Ser Leu Gln Thr  
 225 230 235 240  
 Ser Tyr Val Phe Leu Gly Ile Val Leu Ala Leu Ile Gly Ala Ile Phe  
 245 250 255  
 Leu Leu Val Leu Tyr Leu Asn Arg Lys Gly Ile Lys Lys Trp Met His  
 260 265 270  
 Asn Ile Arg Asp Ala Cys Arg Asp His Met Glu Gly Tyr His Tyr Arg  
 275 280 285  
 Tyr Glu Ile Asn Ala Asp Pro Arg Leu Thr Asn Leu Ser Ser Asn Ser  
 290 295 300  
 Asp Val Leu Glu  
 305

<210> 59  
 <211> 1362  
 <212> DNA  
 <213> Homo sapiens

<400> 59  
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 ctgtcactgc tgccattgaa gttttttcca atcatcgtca ttgggatacat tgcattgata 180  
 ttagcactgg ccattggtct gggcatccac ttcgactgct caggggaagta cagatgtcgc 240  
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 ggggaggacg agtaccgctg tgtccgggtg ggtggtcaga atgccgtgct ccaggtgttc 360  
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 gcctgtgccc aactgggttt cccaagctat gtgagttcag ataacctcag agtgagctcg 480  
 ctggaggggc agttccggga ggagtttgtg tccatcgatc acctcttgcc agatgacaag 540  
 gtgactgcat tacaccactc agtatatgtg agggagggat gtgcctctgg ccacgtgggt 600  
 accttgcatg gcacagcctg tggatcataga aggggctaca gctcacgcat cgtgggtgga 660  
 aacatgtcct tgctctcgca gtggccctgg caggccagcc ttcagttcca gggctaccac 720  
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 ctgggcaatg acatcgccct tatgaagctg gccgggccac tcacgttcaa tgaaatgatc 960  
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<210> 60
<211> 453
<212> PRT
<213> Homo sapiens

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<400> 60
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          20          25          30
Ala Asp Ala Val Ala Ala Gln Ile Leu Ser Leu Leu Pro Leu Lys Phe
          35          40          45
Phe Pro Ile Ile Val Ile Gly Ile Ile Ala Leu Ile Leu Ala Leu Ala
          50          55          60
Ile Gly Leu Gly Ile His Phe Asp Cys Ser Gly Lys Tyr Arg Cys Arg
          65          70          75          80
Ser Ser Phe Lys Cys Ile Glu Leu Ile Ala Arg Cys Asp Gly Val Ser
          85          90          95
Asp Cys Lys Asp Gly Glu Asp Glu Tyr Arg Cys Val Arg Val Gly Gly
          100          105          110
Gln Asn Ala Val Leu Gln Val Phe Thr Ala Ala Ser Trp Lys Thr Met
          115          120          125
Cys Ser Asp Asp Trp Lys Gly His Tyr Ala Asn Val Ala Cys Ala Gln
          130          135          140
Leu Gly Phe Pro Ser Tyr Val Ser Ser Asp Asn Leu Arg Val Ser Ser
          145          150          155          160
Leu Glu Gly Gln Phe Arg Glu Glu Phe Val Ser Ile Asp His Leu Leu
          165          170          175
Pro Asp Asp Lys Val Thr Ala Leu His His Ser Val Tyr Val Arg Glu
          180          185          190
Gly Cys Ala Ser Gly His Val Val Thr Leu Gln Cys Thr Ala Cys Gly
          195          200          205
His Arg Arg Gly Tyr Ser Ser Arg Ile Val Gly Gly Asn Met Ser Leu
          210          215          220
Leu Ser Gln Trp Pro Trp Gln Ala Ser Leu Gln Phe Gln Gly Tyr His
          225          230          235          240
Leu Cys Gly Gly Ser Val Ile Thr Pro Leu Trp Ile Ile Thr Ala Ala
          245          250          255

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His Cys Val Tyr Asp Leu Tyr Leu Pro Lys Ser Trp Thr Ile Gln Val  
 260 265 270  
 Gly Leu Val Ser Leu Leu Asp Asn Pro Ala Pro Ser His Leu Val Glu  
 275 280 285  
 Lys Ile Val Tyr His Ser Lys Tyr Lys Pro Lys Arg Leu Gly Asn Asp  
 290 295 300  
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 <212> DNA  
 <213> Homo sapiens

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 ggtttggaga gcaacgtgaa tgttgaatta ctgaatgctt tacatagtca catgattaat 540  
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<210> 62

<211> 836

<212> PRT

<213> Homo sapiens

<400> 62

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Arg Ile Arg Gly Arg Asp Gln Gly Pro Asn Val Cys Ala Leu Gln Gln
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Ile Leu Gly Thr Lys Lys Lys Tyr Phe Ser Thr Cys Lys Asn Trp Tyr
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Lys Lys Ser Ile Cys Gly Gln Lys Thr Thr Val Leu Tyr Glu Cys Cys
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Thr	Gln	Arg	Tyr	Ser	Asp	Ala	Ser	Lys	Leu	Arg	Glu	Glu	Ile	Glu	Gly	115	120	125
Lys	Gly	Ser	Phe	Thr	Tyr	Phe	Ala	Pro	Ser	Asn	Glu	Ala	Trp	Asp	Asn	130	135	140
Leu	Asp	Ser	Asp	Ile	Arg	Arg	Gly	Leu	Glu	Ser	Asn	Val	Asn	Val	Glu	145	150	155
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Lys	Asp	Leu	Lys	Asn	Gly	Met	Ile	Ile	Pro	Ser	Met	Tyr	Asn	Asn	Leu	180	185	190
Gly	Leu	Phe	Ile	Asn	His	Tyr	Pro	Asn	Gly	Val	Val	Thr	Val	Asn	Cys	195	200	205
Ala	Arg	Ile	Ile	His	Gly	Asn	Gln	Ile	Ala	Thr	Asn	Gly	Val	Val	His	210	215	220
Val	Ile	Asp	Arg	Val	Leu	Thr	Gln	Ile	Gly	Thr	Ser	Ile	Gln	Asp	Phe	225	230	235
Ile	Glu	Ala	Glu	Asp	Asp	Leu	Ser	Ser	Phe	Arg	Ala	Ala	Ala	Ile	Thr	245	250	255
Ser	Asp	Ile	Leu	Glu	Ala	Leu	Gly	Arg	Asp	Gly	His	Phe	Thr	Leu	Phe	260	265	270
Ala	Pro	Thr	Asn	Glu	Ala	Phe	Glu	Lys	Leu	Pro	Arg	Gly	Val	Leu	Glu	275	280	285
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Phe	Glu	Thr	Leu	Glu	Gly	Asn	Thr	Ile	Glu	Ile	Gly	Cys	Asp	Gly	Asp	325	330	335
Ser	Ile	Thr	Val	Asn	Gly	Ile	Lys	Met	Val	Asn	Lys	Lys	Asp	Ile	Val	340	345	350
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Ser	Ala	Lys	Gln	Val	Ile	Glu	Leu	Ala	Gly	Lys	Gln	Gln	Thr	Thr	Phe	370	375	380
Thr	Asp	Leu	Val	Ala	Gln	Leu	Gly	Leu	Ala	Ser	Ala	Leu	Arg	Pro	Asp	385	390	395
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Arg	Gly	Ser	Thr	Phe	Lys	Glu	Ile	Pro	Val	Thr	Val	Tyr	Thr	Thr	Lys	
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Leu	Gln	Pro	Ile	Ile	Lys	Thr	Glu	Gly	Pro	Thr	Leu	Thr	Lys	Val	Lys	
	690					695					700					
Ile	Glu	Gly	Glu	Pro	Glu	Phe	Arg	Leu	Ile	Lys	Glu	Gly	Glu	Thr	Ile	
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Thr Glu Val Ile His Gly Glu Pro Ile Ile Lys Lys Tyr Thr Lys Ile  
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 Arg Ile Ile Thr Gly Pro Glu Ile Lys Tyr Thr Arg Ile Ser Thr Gly  
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 Gly Gly Glu Thr Glu Glu Thr Leu Lys Lys Leu Leu Gln Glu Glu Val  
 770 775 780  
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 785 790 795 800  
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 <212> DNA  
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 <212> PRT  
 <213> Homo sapiens

<400> 64

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			20					25					30		
Pro	Pro	Gly	Arg	Gly	Arg	Ala	Ala	Gly	Pro	Gln	Glu	Asp	Val	Asp	Glu
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Cys	Ala	Gln	Gly	Leu	Asp	Asp	Cys	His	Ala	Asp	Ala	Leu	Cys	Gln	Asn
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Asn	Val	Met	Gly	Ser	Tyr	Glu	Cys	Cys	Cys	Lys	Glu	Gly	Phe	Phe	Leu	
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Ser	Asp	Asn	Gln	His	Thr	Cys	Ile	His	Arg	Ser	Glu	Glu	Gly	Leu	Ser	
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Cys	Met	Asn	Lys	Asp	His	Gly	Cys	Ser	His	Ile	Cys	Lys	Glu	Ala	Pro	
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Arg	Gly	Ser	Val	Ala	Cys	Glu	Cys	Arg	Pro	Gly	Phe	Glu	Leu	Ala	Lys	
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Asn	Gln	Arg	Asp	Cys	Ile	Leu	Thr	Cys	Asn	His	Gly	Asn	Gly	Gly	Cys	
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Asp	Thr	Val	Leu	Glu	Val	Thr	Glu	Ser	Asn	Thr	Thr	Ser	Val	Val	Asp	
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<211> 1294

<212> PRT

<213> Homo sapiens

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Glu Phe Ser Ala Asp Gln Met Ser Glu Asn Thr Asp Gln Ser Asp Ala  
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Ala Glu Leu Asn His Lys Glu Glu His Ser Leu His Val Gln Asp Pro  
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Glu His Gly Ser Val Met His Cys Leu Gly Asp Asp His Pro Gln Glu  
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 <211> 386  
 <212> PRT  
 <213> Homo sapiens

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Lys Cys Cys Glu Glu Glu Leu Asp Phe Arg Ala Val Val Met Asp Glu
      35              40              45

Val Val Leu Thr Ile Glu Gln Gly Asn Leu Gly Leu Arg Ile Asn Gly
      50              55              60

Glu Leu Ile Thr Ala Tyr Pro Gln Val Val Val Val Arg Val Pro Thr
      65              70              75              80

Pro Trp Val Gln Ser Asp Ser Asp Ile Thr Val Leu Arg His Leu Glu
      85              90              95

Lys Met Gly Cys Arg Leu Met Asn Arg Pro Gln Ala Ile Leu Asn Cys
      100             105             110

Val Asn Lys Phe Trp Thr Phe Gln Glu Leu Ala Gly His Gly Val Pro
      115             120             125

Leu Pro Asp Thr Phe Ser Tyr Gly Gly His Glu Asn Phe Ala Lys Met
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Ile Asp Glu Ala Glu Val Leu Glu Phe Pro Met Val Val Lys Asn Thr
      145             150             155             160

Arg Gly His Arg Gly Lys Ala Val Phe Leu Ala Arg Asp Lys His His
      165             170             175

Leu Ala Asp Leu Ser His Leu Ile Arg His Glu Ala Pro Tyr Leu Phe
      180             185             190

Gln Lys Tyr Val Lys Glu Ser His Gly Arg Asp Val Arg Val Ile Val
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Val Gly Gly Arg Val Val Gly Thr Met Leu Arg Cys Ser Thr Asp Gly
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 Gly Met Asp Val Cys Gly Ile Asp Leu Leu Met Lys Asp Asp Gly Ser  
 260 265 270  
 Phe Cys Val Cys Glu Ala Asn Ala Asn Val Gly Phe Ile Ala Phe Asp  
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 Lys Ala Cys Asn Leu Asp Val Ala Gly Ile Ile Ala Asp Tyr Ala Ala  
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 Ser Leu Leu Pro Ser Gly Arg Leu Thr Arg Arg Met Ser Leu Leu Ser  
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 Val Val Ser Thr Ala Ser Glu Thr Ser Glu Pro Glu Leu Gly Pro Pro  
 325 330 335  
 Ala Ser Thr Ala Val Asp Asn Met Ser Ala Ser Ser Ser Ser Val Asp  
 340 345 350  
 Ser Asp Pro Glu Ser Thr Glu Arg Glu Leu Leu Thr Lys Leu Pro Gly  
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 Val Asp  
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 <211> 1431  
 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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 Pro Pro Val Leu Cys Leu His Gly Trp Leu Asp Asn Ala Ser Ser Phe  
 35 40 45  
 Asp Arg Leu Ile Pro Leu Leu Pro Gln Asp Phe Tyr Tyr Val Ala Met  
 50 55 60  
 Asp Phe Gly Gly His Gly Leu Ser Ser His Tyr Ser Pro Gly Val Pro  
 65 70 75 80  
 Tyr Tyr Leu Gln Thr Phe Val Ser Glu Ile Arg Arg Val Val Ala Ala  
 85 90 95  
 Leu Lys Trp Asn Arg Phe Ser Ile Leu Gly His Ser Phe Gly Gly Val  
 100 105 110  
 Val Gly Gly Met Phe Phe Cys Thr Phe Pro Glu Met Val Asp Lys Leu  
 115 120 125  
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 Ser Arg Glu Leu Cys Ala His Ser Ile Arg Lys Leu Gln Ala His Val  
 225 230 235 240  
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 245 250 255  
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Leu Lys Glu Gln Phe Gln Phe Val Glu Val Pro Gly Asn His Cys Val  
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Gln Cys Thr His Met Leu Pro Ala Gln Leu  
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<210> 75  
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 <212> DNA  
 <213> Homo sapiens

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 Gly Phe Ala Ile Ala Arg Arg Leu Ala Arg Asp Gly Ala His Val Val  
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Asn	Val	Lys	Ser	Pro	Ala	Leu	Leu	Leu	Ser	Gln	Leu	Leu	Pro	Tyr	Met	145	150	155	160
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Arg	Val	Asn	Cys	Val	Val	Pro	Gly	Ile	Ile	Lys	Thr	Asp	Phe	Ser	Lys	210	215	220	
Val	Phe	His	Gly	Asn	Glu	Ser	Leu	Trp	Lys	Asn	Phe	Lys	Glu	His	His	225	230	235	240
Gln	Leu	Gln	Arg	Ile	Gly	Glu	Ser	Glu	Asp	Cys	Ala	Gly	Ile	Val	Ser	245	250	255	
Phe	Leu	Cys	Ser	Pro	Asp	Ala	Ser	Tyr	Val	Asn	Gly	Glu	Asn	Ile	Ala	260	265	270	
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 <213> Homo sapiens

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<210> 78
<211> 475
<212> PRT
<213> Homo sapiens

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<400> 78
Met His Leu Ala Phe Leu Val Leu Leu Cys Leu Pro Val Cys Ser Ala
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Tyr Pro Leu Ser Gly Ala Ala Lys Glu Glu Asp Ser Asn Lys Asp Leu
          20              25              30

Ala Gln Gln Tyr Leu Glu Lys Tyr Tyr Asn Leu Glu Lys Asp Val Lys
  35              40              45

Gln Phe Arg Arg Lys Asp Ser Asn Leu Ile Val Lys Lys Ile Gln Gly
  50              55              60

Met Gln Lys Phe Leu Gly Leu Glu Val Thr Gly Lys Leu Asp Thr Asp
  65              70              75              80

Thr Leu Glu Val Met Arg Lys Pro Arg Cys Gly Val Pro Asp Val Gly
          85              90              95

His Phe Ser Ser Phe Pro Gly Met Pro Lys Trp Arg Lys Thr His Leu
          100             105             110

Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp Leu Pro Arg Asp Ala Val
          115             120             125

Asp Ser Ala Ile Glu Lys Ala Leu Lys Val Trp Glu Glu Val Thr Pro
          130             135             140

Leu Thr Phe Ser Arg Leu Tyr Glu Gly Glu Ala Asp Ile Met Ile Ser
          145             150             155             160

Phe Ala Val Lys Glu His Gly Asp Phe Tyr Ser Phe Asp Gly Pro Gly
          165             170             175

His Ser Leu Ala His Ala Tyr Pro Pro Gly Pro Gly Leu Tyr Gly Asp
          180             185             190

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<400> 79

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<210> 80

<211> 680

<212> PRT

<213> Homo sapiens

<400> 80  
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Gly Pro Leu Pro Asn Thr Lys Thr Gln Phe Phe Ile Pro Tyr Thr Ile  
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Lys Ser Lys Gly Ile Ala Val Arg Gly Glu Gln Gly Thr Pro Gly Pro  
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Pro Gly Pro Ala Gly Pro Arg Gly His Pro Gly Pro Ser Gly Pro Pro  
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Gly Lys Pro Gly Tyr Gly Ser Pro Gly Leu Gln Gly Glu Pro Gly Leu  
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Pro Gly Pro Pro Gly Pro Ser Ala Val Gly Lys Pro Gly Val Pro Gly  
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Gly Ile Pro Gly Pro Ala Gly Ile Ser Val Pro Gly Lys Pro Gly Gln  
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Gln Gly Pro Thr Gly Ala Pro Gly Pro Arg Gly Phe Pro Gly Glu Lys  
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180 185 190  
Tyr Gly Ala Pro Gly Arg Pro Gly Glu Arg Gly Leu Pro Gly Pro Gln  
195 200 205  
Gly Pro Thr Gly Pro Ser Gly Pro Pro Gly Val Gly Lys Arg Gly Glu  
210 215 220  
Asn Gly Val Pro Gly Gln Pro Gly Ile Lys Gly Asp Arg Gly Phe Pro  
225 230 235 240  
Gly Glu Met Gly Pro Ile Gly Pro Pro Gly Pro Gln Gly Pro Pro Gly  
245 250 255  
Glu Arg Gly Pro Glu Gly Ile Gly Lys Pro Gly Ala Ala Gly Ala Pro  
260 265 270  
Gly Gln Pro Gly Ile Pro Gly Thr Lys Gly Leu Pro Gly Ala Pro Gly  
275 280 285  
Ile Ala Gly Pro Pro Gly Pro Pro Gly Phe Gly Lys Pro Gly Leu Pro  
290 295 300  
Gly Leu Lys Gly Glu Arg Gly Pro Ala Gly Leu Pro Gly Gly Pro Gly  
305 310 315 320

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Thr	Gly	Pro	Pro	Gly	Asn	Met	Gly	Pro	Gln	Gly	Pro	Lys	Gly	Ile	Pro	
			340					345					350			
Gly	Ser	His	Gly	Leu	Pro	Gly	Pro	Lys	Gly	Glu	Thr	Gly	Pro	Ala	Gly	
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Pro	Ala	Gly	Tyr	Pro	Gly	Ala	Lys	Gly	Glu	Arg	Gly	Ser	Pro	Gly	Ser	
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Gly	Asn	Pro	Gly	Leu	Pro	Gly	Pro	Lys	Gly	Asp	Pro	Gly	Val	Gly	Gly	
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Pro	Arg	Gly	Pro	Ser	Gly	Glu	Pro	Gly	Leu	Pro	Gly	Pro	Pro	Gly	Pro	
			500					505					510			
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Gly	Gln	Arg	Pro	Ser	Leu	Ser	Gly	Thr	Pro	Leu	Val	Ser	Ala	Asn	Gln	
	530					535					540					
Gly	Val	Thr	Gly	Met	Pro	Val	Ser	Ala	Phe	Thr	Val	Ile	Leu	Ser	Lys	
545					550					555					560	
Ala	Tyr	Pro	Ala	Ile	Gly	Thr	Pro	Ile	Pro	Phe	Asp	Lys	Ile	Leu	Tyr	
				565					570					575		
Asn	Arg	Gln	Gln	His	Tyr	Asp	Pro	Arg	Thr	Gly	Ile	Phe	Thr	Cys	Gln	
			580					585					590			
Ile	Pro	Gly	Ile	Tyr	Tyr	Phe	Ser	Tyr	His	Val	His	Val	Lys	Gly	Thr	
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His	Val	Trp	Val	Gly	Leu	Tyr	Lys	Asn	Gly	Thr	Pro	Val	Met	Tyr	Thr	
	610					615					620					
Tyr	Asp	Glu	Tyr	Thr	Lys	Gly	Tyr	Leu	Asp	Gln	Ala	Ser	Gly	Ser	Ala	
625					630					635					640	

1 Thr Glu Asn Asp Gln Val Trp Leu Gln Leu Pro Asn  
645 650 655

1 Gly Leu Tyr Ser Ser Glu Tyr Val His Ser Ser Phe  
665 670

1 Val Ala Pro Met  
680

ens

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<210> 82

<211> 509

<212> PRT

<213> Homo sapiens

<400> 82

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```

```

Gly Ser Val Leu Gly Gln Ala Met Glu Lys Val Thr Gly Gly Asn Leu
          20                      25                      30

```

```

Leu Ser Met Leu Leu Ile Ala Cys Ala Phe Thr Leu Ser Leu Val Tyr
          35                      40                      45

```

```

Leu Ile Arg Leu Ala Ala Gly His Leu Val Gln Leu Pro Ala Gly Val
          50                      55                      60

```

```

Lys Ser Pro Pro Tyr Ile Phe Ser Pro Ile Pro Phe Leu Gly His Ala
          65                      70                      75                      80

```

```

Ile Ala Phe Gly Lys Ser Pro Ile Glu Phe Leu Glu Asn Ala Tyr Glu
          85                      90                      95

```

```

Lys Tyr Gly Pro Val Phe Ser Phe Thr Met Val Gly Lys Thr Phe Thr
          100                      105                      110

```

```

Tyr Leu Leu Gly Ser Asp Ala Ala Ala Leu Leu Phe Asn Ser Lys Asn
          115                      120                      125

```

```

Glu Asp Leu Asn Ala Glu Asp Val Tyr Ser Arg Leu Thr Thr Pro Val
          130                      135                      140

```

```

Phe Gly Lys Gly Val Ala Tyr Asp Val Pro Asn Pro Val Phe Leu Glu
          145                      150                      155                      160

```

```

Gln Lys Lys Met Leu Lys Ser Gly Leu Asn Ile Ala His Phe Lys Gln
          165                      170                      175

```

```

His Val Ser Ile Ile Glu Lys Glu Thr Lys Glu Tyr Phe Glu Ser Trp
          180                      185                      190

```

```

Gly Glu Ser Gly Glu Lys Asn Val Phe Glu Ala Leu Ser Glu Leu Ile
          195                      200                      205

```

```

Ile Leu Thr Ala Ser His Cys Leu His Gly Lys Glu Ile Arg Ser Gln
          210                      215                      220

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Leu	Asn	Glu	Lys	Val	Ala	Gln	Leu	Tyr	Ala	Asp	Leu	Asp	Gly	Gly	Phe	225	230	235	240
Ser	His	Ala	Ala	Trp	Leu	Leu	Pro	Gly	Trp	Leu	Pro	Leu	Pro	Ser	Phe	245	250	255	
Arg	Arg	Arg	Asp	Arg	Ala	His	Arg	Glu	Ile	Lys	Asp	Ile	Phe	Tyr	Lys	260	265	270	
Ala	Ile	Gln	Lys	Arg	Arg	Gln	Ser	Gln	Glu	Lys	Ile	Asp	Asp	Ile	Leu	275	280	285	
Gln	Thr	Leu	Leu	Asp	Ala	Thr	Tyr	Lys	Asp	Gly	Arg	Pro	Leu	Thr	Asp	290	295	300	
Asp	Glu	Val	Ala	Gly	Met	Leu	Ile	Gly	Leu	Leu	Leu	Ala	Gly	Gln	His	305	310	315	320
Thr	Ser	Ser	Thr	Thr	Ser	Ala	Trp	Met	Gly	Phe	Phe	Leu	Ala	Arg	Asp	325	330	335	
Lys	Thr	Leu	Gln	Lys	Lys	Cys	Tyr	Leu	Glu	Gln	Lys	Thr	Val	Cys	Gly	340	345	350	
Glu	Asn	Leu	Pro	Pro	Leu	Thr	Tyr	Asp	Gln	Leu	Lys	Asp	Leu	Asn	Leu	355	360	365	
Leu	Asp	Arg	Cys	Ile	Lys	Glu	Thr	Leu	Arg	Leu	Arg	Pro	Pro	Ile	Met	370	375	380	
Ile	Met	Met	Arg	Met	Ala	Arg	Thr	Pro	Gln	Thr	Val	Ala	Gly	Tyr	Thr	385	390	395	400
Ile	Pro	Pro	Gly	His	Gln	Val	Cys	Val	Ser	Pro	Thr	Val	Asn	Gln	Arg	405	410	415	
Leu	Lys	Asp	Ser	Trp	Val	Glu	Arg	Leu	Asp	Phe	Asn	Pro	Asp	Arg	Tyr	420	425	430	
Leu	Gln	Asp	Asn	Pro	Ala	Ser	Gly	Glu	Lys	Phe	Ala	Tyr	Val	Pro	Phe	435	440	445	
Gly	Ala	Gly	Arg	His	Arg	Cys	Ile	Gly	Glu	Asn	Phe	Ala	Tyr	Val	Gln	450	455	460	
Ile	Lys	Thr	Ile	Trp	Ser	Thr	Met	Leu	Arg	Leu	Tyr	Glu	Phe	Asp	Leu	465	470	475	480
Ile	Asp	Gly	Tyr	Phe	Pro	Thr	Val	Asn	Tyr	Thr	Thr	Met	Ile	His	Thr	485	490	495	
Pro	Glu	Asn	Pro	Val	Ile	Arg	Tyr	Lys	Arg	Arg	Ser	Lys				500	505		

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 <211> 444  
 <212> DNA  
 <213> Homo sapiens

<400> 83  
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aatgccgagt tctgcccagc tcttggtttct gagctgttag acttcttctt cattagttaa 180  
cctctgttca agttaagtct tgccaaattt gatgcccctc cggaagctgt tgcagccaag 240  
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gtcctgggtga aaatattgaa gaaatgtagt gtgtgacatg taaaaacttt catcctgggt 360  
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gctttaataa atcacttgct ctac 444

<210> 84  
<211> 90  
<212> PRT  
<213> Homo sapiens

<400> 84  
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Asp Phe Phe Phe Ile Ser Glu Pro Leu Phe Lys Leu Ser Leu Ala Lys  
35 40 45  
Phe Asp Ala Pro Pro Glu Ala Val Ala Ala Lys Leu Gly Val Lys Arg  
50 55 60  
Cys Thr Asp Gln Met Ser Leu Gln Lys Arg Ser Leu Ile Ala Glu Val  
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Leu Val Lys Ile Leu Lys Lys Cys Ser Val  
85 90

<210> 85  
<211> 1780  
<212> DNA  
<213> Homo sapiens

<400> 85  
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<210> 86  
 <211> 417  
 <212> PRT  
 <213> Homo sapiens

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<400> 86
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Ala Leu Val His Cys Ala Pro Pro Ala Ala Gly Gln Gln Gln Pro Pro
      20              25              30

Arg Glu Pro Pro Ala Ala Pro Gly Ala Trp Arg Gln Gln Ile Gln Trp
      35              40              45

Glu Asn Asn Gly Gln Val Phe Ser Leu Leu Ser Leu Gly Ser Gln Tyr
      50              55              60

Gln Pro Gln Arg Arg Arg Asp Pro Gly Ala Ala Val Pro Gly Ala Ala
      65              70              75              80

Asn Ala Ser Ala Gln Gln Pro Arg Thr Pro Ile Leu Leu Ile Arg Asp
      85              90              95

Asn Arg Thr Ala Ala Gly Arg Thr Arg Thr Ala Gly Ser Ser Gly Val
      100              105              110

Thr Ala Gly Arg Pro Arg Pro Thr Ala Arg His Trp Phe Gln Ala Gly
      115              120              125

Tyr Ser Thr Ser Arg Ala Arg Glu Ala Gly Pro Ser Arg Ala Glu Asn
      130              135              140

Gln Thr Ala Pro Gly Glu Val Pro Ala Leu Ser Asn Leu Arg Pro Pro
      145              150              155              160

Ser Arg Val Asp Gly Met Val Gly Asp Asp Pro Tyr Asn Pro Tyr Lys
      165              170              175

Tyr Ser Asp Asp Asn Pro Tyr Tyr Asn Tyr Tyr Asp Thr Tyr Glu Arg
      180              185              190

Pro Arg Pro Gly Gly Arg Tyr Arg Pro Gly Tyr Gly Thr Gly Tyr Phe
      195              200              205

Gln Tyr Gly Leu Pro Asp Leu Val Ala Asp Pro Tyr Tyr Ile Gln Ala
      210              215              220

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Ser	Thr	Tyr	Val	Gln	Lys	Met	Ser	Met	Tyr	Asn	Leu	Arg	Cys	Ala	Ala	
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Glu	Glu	Asn	Cys	Leu	Ala	Ser	Thr	Ala	Tyr	Arg	Ala	Asp	Val	Arg	Asp	
				245					250					255		
Tyr	Asp	His	Arg	Val	Leu	Leu	Arg	Phe	Pro	Gln	Arg	Val	Lys	Asn	Gln	
			260					265					270			
Gly	Thr	Ser	Asp	Phe	Leu	Pro	Ser	Arg	Pro	Arg	Tyr	Ser	Trp	Glu	Trp	
		275					280					285				
His	Ser	Cys	His	Gln	His	Tyr	His	Ser	Met	Asp	Glu	Phe	Ser	His	Leu	
	290					295					300					
Tyr	Leu	Leu	Asp	Ala	Asn	Thr	Gln	Arg	Arg	Trp	Ala	Glu	Gly	His	Lys	
305					310					315					320	
Ala	Ser	Phe	Cys	Leu	Glu	Asp	Thr	Ser	Cys	Asp	Tyr	Gly	Tyr	His	Arg	
				325					330					335		
Arg	Phe	Ala	Cys	Thr	Ala	His	Thr	Gln	Gly	Leu	Ser	Pro	Gly	Cys	Tyr	
			340					345					350			
Asp	Thr	Tyr	Gly	Ala	Asp	Ile	Asp	Cys	Gln	Trp	Ile	Asp	Ile	Thr	Asp	
		355					360					365				
Val	Lys	Pro	Gly	Asn	Tyr	Ile	Leu	Lys	Val	Ser	Val	Asn	Pro	Ser	Tyr	
	370					375					380					
Leu	Val	Pro	Glu	Ser	Asp	Tyr	Thr	Asn	Asn	Val	Val	Arg	Cys	Asp	Ile	
385					390					395					400	
Arg	Tyr	Thr	Gly	His	His	Ala	Tyr	Ala	Ser	Gly	Cys	Thr	Ile	Ser	Pro	
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Tyr

<210> 87  
 <211> 1216  
 <212> DNA  
 <213> Homo sapiens

<400> 87

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<210> 88
<211> 109
<212> PRT
<213> Homo sapiens

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<400> 88
Met Lys Phe Ile Ser Thr Ser Leu Leu Leu Met Leu Leu Val Ser Ser
  1             5             10             15

Leu Ser Pro Val Gln Gly Val Leu Glu Val Tyr Tyr Thr Ser Leu Arg
          20             25             30

Cys Arg Cys Val Gln Glu Ser Ser Val Phe Ile Pro Arg Arg Phe Ile
          35             40             45

Asp Arg Ile Gln Ile Leu Pro Arg Gly Asn Gly Cys Pro Arg Lys Glu
          50             55             60

Ile Ile Val Trp Lys Lys Asn Lys Ser Ile Val Cys Val Asp Pro Gln
          65             70             75             80

Ala Glu Trp Ile Gln Arg Met Met Glu Val Leu Arg Lys Arg Ser Ser
          85             90             95

Ser Thr Leu Pro Val Pro Val Phe Lys Arg Lys Ile Pro
          100             105

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<210> 89
<211> 576
<212> DNA
<213> Homo sapiens

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<400> 89
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caggacaaca ctcggaagat cataataaag aattttgaca ttcccaagtc agtacgtcca 180
aatgacgaag tctactgcagt gcttgcagtt caaacagaat tgaaagaatg catggtggtt 240
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caaattgcag ccgtcgttga tgttattcgg gaattaggca tctgccctga tgatgctgct 420
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<210> 90
<211> 145
<212> PRT
<213> Homo sapiens

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<400> 90  
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20 25 30  
Arg Lys Ile Ile Ile Lys Asn Phe Asp Ile Pro Lys Ser Val Arg Pro  
35 40 45  
Asn Asp Glu Val Thr Ala Val Leu Ala Val Gln Thr Glu Leu Lys Glu  
50 55 60  
Cys Met Val Val Lys Thr Tyr Leu Ile Ser Ser Ile Pro Leu Gln Gly  
65 70 75 80  
Ala Phe Asn Tyr Lys Tyr Thr Ala Cys Leu Cys Asp Asp Asn Pro Lys  
85 90 95  
Thr Phe Tyr Trp Asp Phe Tyr Thr Asn Arg Thr Val Gln Ile Ala Ala  
100 105 110  
Val Val Asp Val Ile Arg Glu Leu Gly Ile Cys Pro Asp Asp Ala Ala  
115 120 125  
Val Ile Pro Ile Lys Asn Asn Arg Phe Tyr Thr Ile Glu Ile Leu Lys  
130 135 140  
Val  
145

<210> 91  
<211> 2340  
<212> DNA  
<213> Homo sapiens

<400> 91  
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<210> 92
<211> 296
<212> PRT
<213> Homo sapiens

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<400> 92
Met Glu His Leu Lys Ala Phe Asp Asp Glu Ile Asn Ala Phe Leu Asp
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Asn Met Phe Gly Pro Arg Asp Ser Arg Val Arg Gly Trp Phe Thr Leu
          20             25             30

Asp Ser Tyr Leu Pro Thr Phe Phe Leu Thr Val Met Tyr Leu Leu Ser
          35             40             45

Ile Trp Leu Gly Asn Lys Tyr Met Lys Asn Arg Pro Ala Leu Ser Leu
          50             55             60

Arg Gly Ile Leu Thr Leu Tyr Asn Leu Gly Ile Thr Leu Leu Ser Ala
          65             70             75             80

Tyr Met Leu Ala Glu Leu Ile Leu Ser Thr Trp Glu Gly Gly Tyr Asn
          85             90             95

Leu Gln Cys Gln Asp Leu Thr Ser Ala Gly Glu Ala Asp Ile Arg Val
          100            105            110

Ala Lys Val Leu Trp Trp Tyr Tyr Phe Ser Lys Ser Val Glu Phe Leu
          115            120            125

Asp Thr Ile Phe Phe Val Leu Arg Lys Lys Thr Ser Gln Ile Thr Phe
          130            135            140

Leu His Val Tyr His His Ala Ser Met Phe Asn Ile Trp Trp Cys Val
          145            150            155            160

Leu Asn Trp Ile Pro Cys Gly Gln Ser Phe Phe Gly Pro Thr Leu Asn
          165            170            175

Ser Phe Val His Ile Leu Met Tyr Ser Tyr Tyr Gly Leu Ser Val Phe
          180            185            190

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Pro	Ser	Met	His	Lys	Tyr	Leu	Trp	Trp	Lys	Lys	Tyr	Leu	Thr	Gln	Ala	
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Gln	Leu	Val	Gln	Phe	Val	Leu	Thr	Ile	Thr	His	Thr	Met	Ser	Ala	Val	
210			215			220										
Val	Lys	Pro	Cys	Gly	Phe	Pro	Phe	Gly	Cys	Leu	Ile	Phe	Gln	Ser	Ser	
225				230						235				240		
Tyr	Met	Leu	Thr	Leu	Val	Ile	Leu	Phe	Leu	Asn	Phe	Tyr	Val	Gln	Thr	
				245						250		255				
Tyr	Arg	Lys	Lys	Pro	Met	Lys	Lys	Asp	Met	Gln	Glu	Pro	Pro	Ala	Gly	
				260		265				270						
Lys	Glu	Val	Lys	Asn	Gly	Phe	Ser	Lys	Ala	Tyr	Phe	Thr	Ala	Ala	Asn	
275						280						285				
Gly	Val	Met	Asn	Lys	Lys	Ala	Gln									
290				295												

<210> 93  
 <211> 4321  
 <212> DNA  
 <213> Homo sapiens

<400> 93

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<210> 94
<211> 919
<212> PRT
<213> Homo sapiens

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Val Ile Gln Asn Pro Gly Pro Arg His Pro Glu Ala Ala Ser Ala Ala
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Pro Pro Gly Ala Ser Leu Leu Leu Leu Gln Gln Gln Gln Gln Gln
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 <212> DNA  
 <213> Homo sapiens

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<210> 96  
 <211> 445  
 <212> PRT  
 <213> Homo sapiens

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Lys Gln Met Leu Val Ser Glu Val Asn Leu Leu Arg Glu Leu Lys His
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Pro Asn Ile Val Arg Tyr Tyr Asp Arg Ile Ile Asp Arg Thr Asn Thr
    65                      70                      75                      80

Thr Leu Tyr Ile Val Met Glu Tyr Cys Glu Gly Gly Asp Leu Ala Ser
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Val Ile Thr Lys Gly Thr Lys Glu Arg Gln Tyr Leu Asp Glu Glu Phe
    100                      105                      110

Val Leu Arg Val Met Thr Gln Leu Thr Leu Ala Leu Lys Glu Cys His
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Arg Arg Ser Asp Gly Gly His Thr Val Leu His Arg Asp Leu Lys Pro
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Ala Asn Val Phe Leu Asp Gly Lys Gln Asn Val Lys Leu Gly Asp Phe
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		435					440					445			

Leu Arg Gly Leu Arg Pro Phe Met Thr Ile Arg Leu Arg Leu Leu Leu  
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 Thr Tyr Ser Phe Thr Ile Lys Ala Ser Thr Ala Lys Gly Phe Gly Pro  
 565 570 575  
 Pro Val Thr Thr Arg Ile Ala Thr Lys Ile Ser Ala Pro Ser Met Pro  
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 Glu Tyr Asp Thr Asp Thr Pro Leu Asn Glu Thr Asp Thr Thr Ile Thr  
 595 600 605  
 Val Met Leu Lys Pro Ala Gln Ser Arg Gly Ala Pro Val Ser Val Tyr  
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 625 630 635 640  
 Asp Ile Ile Glu Cys Phe Ser Val Pro Val Ser Tyr Arg Asn Ala Ser  
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 690 695 700  
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 705 710 715 720  
 Arg Leu Ala Thr Thr Gly Ala Ser Thr Gln Asn Ser Asn Thr Val Glu  
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 Pro Glu Lys Gln Val Asp Asn Thr Val Lys Met Ala Gly Val Ile Ala  
 740 745 750  
 Gly Leu Leu Met Phe Ile Ile Ile Leu Leu Gly Val Met Leu Thr Ile  
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 Gly Cys Tyr Gly Pro Ile Gln Val Glu Phe Val Ser Ala Asp Ile Asp  
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Val Phe His Ile Val Lys Thr Leu Arg Asn Asn Lys Ser Asn Met Val  
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Glu Thr Leu Glu Gln Tyr Lys Phe Val Tyr Glu Val Ala Leu Glu Tyr  
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 <211> 803  
 <212> DNA  
 <213> Homo sapiens

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 <211> 89  
 <212> PRT  
 <213> Homo sapiens

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 Val Tyr Thr Ser Trp Gln Ile Pro Gln Lys Phe Ile Val Asp Tyr Ser  
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 Glu Thr Ser Pro Gln Cys Pro Lys Pro Gly Val Ile Leu Leu Thr Lys  
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<210> 101  
 <211> 2398  
 <212> DNA  
 <213> Homo sapiens



<400> 101

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<210> 102

<211> 553

<212> PRT

<213> Homo sapiens

<400> 102

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Ala Ser Ala Arg Gln Pro Gly Val Cys His Tyr Gly Thr Lys Leu Ala
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Cys Cys Tyr Gly Trp Arg Arg Asn Ser Lys Gly Val Cys Glu Ala Thr
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Cys 65	Glu	Pro	Gly	Cys	Lys 70	Phe	Gly	Glu	Cys	Val 75	Gly	Pro	Asn	Lys	Cys 80
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Glu	Cys	Gly	Met 100	Lys	Pro	Arg	Pro	Cys 105	Gln	His	Arg	Cys	Val 110	Asn	Thr
His	Gly 115	Ser	Tyr	Lys	Cys	Phe	Cys 120	Leu	Ser	Gly	His	Met 125	Leu	Met	Pro
Asp 130	Ala	Thr	Cys	Val	Asn	Ser 135	Arg	Thr	Cys	Ala	Met 140	Ile	Asn	Cys	Gln
Tyr 145	Ser	Cys	Glu	Asp	Thr 150	Glu	Glu	Gly	Pro	Gln 155	Cys	Leu	Cys	Pro	Ser 160
Ser	Gly	Leu	Arg	Leu 165	Ala	Pro	Asn	Gly	Arg 170	Asp	Cys	Leu	Asp	Ile 175	Asp
Glu	Cys	Ala	Ser 180	Gly	Lys	Val	Ile	Cys 185	Pro	Tyr	Asn	Arg	Arg 190	Cys	Val
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Gln 210	Tyr	Ile	Ser	Gly	Arg	Tyr 215	Asp	Cys	Ile	Asp	Ile 220	Asn	Glu	Cys	Thr
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Arg	Cys	Ser	Ala 260	Ile	Pro	Glu	Asn	Ser	Val 265	Lys	Glu	Val	Leu	Arg	Ala
Pro	Gly 275	Thr	Ile	Lys	Asp	Arg	Ile 280	Lys	Lys	Leu	Leu	Ala 285	His	Lys	Asn
Ser 290	Met	Lys	Lys	Lys	Ala	Lys 295	Ile	Lys	Asn	Val	Thr 300	Pro	Glu	Pro	Thr
Arg 305	Thr	Pro	Thr	Pro	Lys 310	Val	Asn	Leu	Gln 315	Pro	Phe	Asn	Tyr	Glu	Glu 320
Ile	Val	Ser	Arg	Gly 325	Gly	Asn	Ser	His	Gly 330	Gly	Lys	Lys	Gly	Asn 335	Glu
Glu	Lys	Met	Lys 340	Glu	Gly	Leu	Glu	Asp 345	Glu	Lys	Arg	Glu	Glu	Lys	Ala
Leu	Lys 355	Asn	Asp	Ile	Glu	Glu	Arg 360	Ser	Leu	Arg	Gly	Asp 365	Val	Phe	Phe
Pro 370	Lys	Val	Asn	Glu	Ala	Gly 375	Glu	Phe	Gly	Leu	Ile 380	Leu	Val	Gln	Arg

Lys Ala Leu Thr Ser Lys Leu Glu His Lys Asp Leu Asn Ile Ser Val  
 385 390 395 400  
 Asp Cys Ser Phe Asn His Gly Ile Cys Asp Trp Lys Gln Asp Arg Glu  
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 Asp Asp Phe Asp Trp Asn Pro Ala Asp Arg Asp Asn Ala Ile Gly Phe  
 420 425 430  
 Tyr Met Ala Val Pro Ala Leu Ala Gly His Lys Lys Asp Ile Gly Arg  
 435 440 445  
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 450 455 460  
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 465 470 475 480  
 Phe Val Lys Asn Ser Asn Asn Ala Leu Ala Trp Glu Lys Thr Thr Ser  
 485 490 495  
 Glu Asp Glu Lys Trp Lys Thr Gly Lys Ile Gln Leu Tyr Gln Gly Thr  
 500 505 510  
 Asp Ala Thr Lys Ser Ile Ile Phe Glu Ala Glu Arg Gly Lys Gly Lys  
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<210> 103  
 <211> 1120  
 <212> DNA  
 <213> Homo sapiens

<400> 103  
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<210> 104  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

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                   20                  25                  30  
 Ile Ser Ile Ser Asn Gln Pro Val Asn Pro Arg Ser Leu Glu Lys Leu  
           35                  40                  45  
 Glu Ile Ile Pro Ala Ser Gln Phe Cys Pro Arg Val Glu Ile Ile Ala  
       50                  55                  60  
 Thr Met Lys Lys Lys Gly Glu Lys Arg Cys Leu Asn Pro Glu Ser Lys  
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<210> 105  
 <211> 6253  
 <212> DNA  
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 <212> PRT  
 <213> Homo sapiens

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Glu Pro Thr Pro Glu Asp Glu Asp Asp Asp Ile Glu Leu Arg Gly Ala
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Ala Ala Ala Ala Ala Pro Pro Pro Pro Ile Glu Glu Glu Cys Pro Glu
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Asp Leu Pro Glu Lys Phe Asp Gly Asn Pro Asp Met Leu Ala Pro Phe
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Val Asp Arg Val Arg Val Cys Phe Val Thr Ser Met Met Thr Gly Arg
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Ala Ala Arg Trp Ala Ser Ala Lys Leu Glu Arg Ser His Tyr Leu Met
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His Asn Tyr Pro Ala Phe Met Met Glu Met Lys His Val Phe Glu Asp
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Pro Gln Arg Arg Glu Val Ala Lys Arg Lys Ile Arg Arg Leu Arg Gln
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 <212> PRT  
 <213> Homo sapiens

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 Asp His Ala Ile Ser Asp Leu Ser Met Tyr Asn Tyr Ile Glu Met Arg  
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 Ala His Val Asn Ser Ser Trp Phe Ile Phe Gln Lys Asn Met Glu Arg  
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<210> 110  
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 <212> PRT  
 <213> Homo sapiens

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Ser Leu Leu Lys Asp Glu Ala Leu Ala Ile Ala Ala Leu Glu Leu Leu
      35             40             45

Pro Arg Glu Leu Phe Pro Pro Leu Phe Met Ala Ala Phe Asp Gly Arg
      50             55             60

His Ser Gln Thr Leu Lys Ala Met Val Gln Ala Trp Pro Phe Thr Cys
      65             70             75             80

Leu Pro Leu Gly Val Leu Met Lys Gly Gln His Leu His Leu Glu Thr
      85             90             95

Phe Lys Ala Val Leu Asp Gly Leu Asp Val Leu Leu Ala Gln Glu Val
      100            105            110

Arg Pro Arg Arg Trp Lys Leu Gln Val Leu Asp Leu Arg Lys Asn Ser
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His Gln Asp Phe Trp Thr Val Trp Ser Gly Asn Arg Ala Ser Leu Tyr
      130            135            140

Ser Phe Pro Glu Pro Glu Ala Ala Gln Pro Met Thr Lys Lys Arg Lys
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Val Asp Gly Leu Ser Thr Glu Ala Glu Gln Pro Phe Ile Pro Val Glu
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<212> DNA  
<213> Homo sapiens

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Thr Leu Glu Asn Cys Cys Tyr Gln Gly Arg Val Arg Gly Tyr Ala Gly  
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His Thr Cys Ala Leu Ser Trp Arg Glu Ser Val His Thr Gln Thr Pro  
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Val Thr Glu Thr Lys Thr Val Glu Leu Val Ile Val Ala Asp His Ser  
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 Cys Arg Ser Lys Cys His Gly His Gly Val Cys Asp Ser Asn Arg His  
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 Cys Tyr Cys Glu Glu Gly Trp Ala Pro Pro Asp Cys Thr Thr Gln Leu  
 675 680 685  
 Lys Ala Thr Ser Ser Leu Thr Thr Gly Leu Leu Leu Ser Leu Leu Val  
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 <212> DNA  
 <213> Homo sapiens

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<211> 125
<212> PRT
<213> Homo sapiens

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Cys Ile Ser Thr Asn Gln Gly Thr Ile His Leu Gln Ser Leu Lys Asp
      35             40             45

Leu Lys Gln Phe Ala Pro Ser Pro Ser Cys Glu Lys Ile Glu Ile Ile
      50             55             60

Ala Thr Leu Lys Asn Gly Val Gln Thr Cys Leu Asn Pro Asp Ser Ala
      65             70             75             80

Asp Val Lys Glu Leu Ile Lys Lys Trp Glu Lys Gln Val Ser Gln Lys
      85             90             95

Lys Lys Gln Lys Asn Gly Lys Lys His Gln Lys Lys Lys Val Leu Lys
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Val Arg Lys Ser Gln Arg Ser Arg Gln Lys Lys Thr Thr
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 <211> 414  
 <212> PRT  
 <213> Homo sapiens

<400> 116  
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 Met Arg Lys Arg Ile Glu Ala Ile Arg Gly Gln Ile Leu Ser Lys Leu  
 35 40 45  
 Lys Leu Thr Ser Pro Pro Glu Asp Tyr Pro Glu Pro Glu Glu Val Pro  
 50 55 60  
 Pro Glu Val Ile Ser Ile Tyr Asn Ser Thr Arg Asp Leu Leu Gln Glu  
 65 70 75 80  
 Lys Ala Ser Arg Arg Ala Ala Ala Cys Glu Arg Glu Arg Ser Asp Glu  
 85 90 95



Glu	Tyr	Tyr	Ala	Lys	Glu	Val	Tyr	Lys	Ile	Asp	Met	Pro	Pro	Phe	Phe	
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		115					120					125				
Ile	Val	Arg	Phe	Asp	Val	Ser	Ala	Met	Glu	Lys	Asn	Ala	Ser	Asn	Leu	
	130					135					140					
Val	Lys	Ala	Glu	Phe	Arg	Val	Phe	Arg	Leu	Gln	Asn	Pro	Lys	Ala	Arg	
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Val	Pro	Glu	Gln	Arg	Ile	Glu	Leu	Tyr	Gln	Ile	Leu	Lys	Ser	Lys	Asp	
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Leu	Thr	Ser	Pro	Thr	Gln	Arg	Tyr	Ile	Asp	Ser	Lys	Val	Val	Lys	Thr	
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Arg	Ala	Glu	Gly	Glu	Trp	Leu	Ser	Phe	Asp	Val	Thr	Asp	Ala	Val	His	
		195					200					205				
Glu	Trp	Leu	His	His	Lys	Asp	Arg	Asn	Leu	Gly	Phe	Lys	Ile	Ser	Leu	
	210					215					220					
His	Cys	Pro	Cys	Cys	Thr	Phe	Val	Pro	Ser	Asn	Asn	Tyr	Ile	Ile	Pro	
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Pro	Leu	Tyr	Ile	Asp	Phe	Lys	Arg	Asp	Leu	Gly	Trp	Lys	Trp	Ile	His	
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		355					360					365				
Thr	Ile	Asn	Pro	Glu	Ala	Ser	Ala	Ser	Pro	Cys	Cys	Val	Ser	Gln	Asp	
	370					375					380					
Leu	Glu	Pro	Leu	Thr	Ile	Leu	Tyr	Tyr	Ile	Gly	Lys	Thr	Pro	Lys	Ile	
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 <211> 2439  
 <212> DNA  
 <213> Homo sapiens

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<210> 118  
 <211> 757  
 <212> PRT  
 <213> Homo sapiens

<400> 118  
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Arg	Asp	Trp	Leu	Arg	Gln	Gln	Val	Arg	Glu	Ile	Thr	Phe	Leu	Lys	Asn			
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Thr	Val	Met	Glu	Cys	Asp	Ala	Cys	Gly	Met	Gln	Gln	Ser	Val	Arg	Thr			
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Phe	Pro	Gly	Val	Ala	Cys	Ile	Gln	Thr	Glu	Ser	Gly	Gly	Arg	Cys	Gly			
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Pro	Cys	Pro	Ala	Gly	Phe	Thr	Gly	Asn	Gly	Ser	His	Cys	Thr	Asp	Val			
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Asn	Glu	Cys	Asn	Ala	His	Pro	Cys	Phe	Pro	Arg	Val	Arg	Cys	Ile	Asn			
	130					135					140							
Thr	Ser	Pro	Gly	Phe	Arg	Cys	Glu	Ala	Cys	Pro	Pro	Gly	Tyr	Ser	Gly			
	145				150					155					160			
Pro	Thr	His	Gln	Gly	Val	Gly	Leu	Ala	Phe	Ala	Lys	Ala	Asn	Lys	Gln			
				165					170					175				
Val	Cys	Thr	Asp	Ile	Asn	Glu	Cys	Glu	Thr	Gly	Gln	His	Asn	Cys	Val			
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Pro	Asn	Ser	Val	Cys	Ile	Asn	Thr	Arg	Gly	Ser	Phe	Gln	Cys	Gly	Pro			
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Cys	Gln	Pro	Gly	Phe	Val	Gly	Asp	Gln	Ala	Ser	Gly	Cys	Gln	Arg	Gly			
	210					215					220							
Ala	Gln	Arg	Phe	Cys	Pro	Asp	Gly	Ser	Pro	Ser	Glu	Cys	His	Glu	His			
	225				230					235					240			
Ala	Asp	Cys	Val	Leu	Glu	Arg	Asp	Gly	Ser	Arg	Ser	Cys	Val	Cys	Arg			
				245					250					255				
Val	Gly	Trp	Ala	Gly	Asn	Gly	Ile	Leu	Cys	Gly	Arg	Asp	Thr	Asp	Leu			
			260					265					270					
Asp	Gly	Phe	Pro	Asp	Glu	Lys	Leu	Arg	Cys	Pro	Glu	Pro	Gln	Cys	Arg			
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Lys	Asp	Asn	Cys	Val	Thr	Val	Pro	Asn	Ser	Gly	Gln	Glu	Asp	Val	Asp			
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Arg	Asp	Gly	Ile	Gly	Asp	Ala	Cys	Asp	Pro	Asp	Ala	Asp	Gly	Asp	Gly			
	305				310					315					320			
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				325					330					335				
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Asp	Gly	Ile	Gly	Asp	Ala	Cys	Asp	Asn	Cys	Pro	Gln	Lys	Ser	Asn	Pro	
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Asp	Gln	Ala	Asp	Val	Asp	His	Asp	Phe	Val	Gly	Asp	Ala	Cys	Asp	Ser	
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Arg	Asp	Gly	Val	Gly	Asp	Val	Cys	Gln	Asp	Asp	Phe	Asp	Ala	Asp	Lys	
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Thr	Asp	Phe	Arg	Ala	Phe	Gln	Thr	Val	Val	Leu	Asp	Pro	Glu	Gly	Asp	
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Ala	Gln	Ile	Asp	Pro	Asn	Trp	Val	Val	Leu	Asn	Gln	Gly	Arg	Glu	Ile	
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Val	Gln	Thr	Met	Asn	Ser	Asp	Pro	Gly	Leu	Ala	Val	Gly	Tyr	Thr	Ala	
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Phe	Asn	Gly	Val	Asp	Phe	Glu	Gly	Thr	Phe	His	Val	Asn	Thr	Val	Thr	
			580					585					590			
Asp	Asp	Asp	Tyr	Ala	Gly	Phe	Ile	Phe	Gly	Tyr	Gln	Asp	Ser	Ser	Ser	
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Phe	Tyr	Val	Val	Met	Trp	Lys	Gln	Met	Glu	Gln	Thr	Tyr	Trp	Gln	Ala	
	610					615					620					
Asn	Pro	Phe	Arg	Ala	Val	Ala	Glu	Pro	Gly	Ile	Gln	Leu	Lys	Ala	Val	
625					630					635					640	
Lys	Ser	Ser	Thr	Gly	Pro	Gly	Glu	Gln	Leu	Arg	Asn	Ala	Leu	Trp	His	
				645					650					655		
Thr	Gly	Asp	Thr	Glu	Ser	Gln	Val	Arg	Leu	Leu	Trp	Lys	Asp	Pro	Arg	
			660					665					670			

Asn Val Gly Trp Lys Asp Lys Lys Ser Tyr Arg Trp Phe Leu Gln His  
 675 680 685  
 Arg Pro Gln Val Gly Tyr Ile Arg Val Arg Phe Tyr Glu Gly Pro Glu  
 690 695 700  
 Leu Val Ala Asp Ser Asn Val Val Leu Asp Thr Thr Met Arg Gly Gly  
 705 710 715 720  
 Arg Leu Gly Val Phe Cys Phe Ser Gln Glu Asn Ile Ile Trp Ala Asn  
 725 730 735  
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 Gln Leu Arg Gln Ala  
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<210> 119  
 <211> 3264  
 <212> DNA  
 <213> Homo sapiens

<400> 119  
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<210> 120
<211> 440
<212> PRT
<213> Homo sapiens

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<400> 120
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Ser Asp Lys Leu Ser Leu Pro Gly Phe Glu Asn Leu Thr Ala Gly Tyr
      35             40             45

Asn Lys Phe Leu Arg Pro Asn Phe Gly Gly Glu Pro Val Gln Ile Ala
      50             55             60

Leu Thr Leu Asp Ile Ala Ser Ile Ser Ser Ile Ser Glu Ser Asn Met
      65             70             75             80

Asp Tyr Thr Ala Thr Ile Tyr Leu Arg Gln Arg Trp Met Asp Gln Arg
      85             90             95

Leu Val Phe Glu Gly Asn Lys Ser Phe Thr Leu Asp Ala Arg Leu Val
      100            105            110

Glu Phe Leu Trp Val Pro Asp Thr Tyr Ile Val Glu Ser Lys Lys Ser
      115            120            125

Phe Leu His Glu Val Thr Val Gly Asn Arg Leu Ile Arg Leu Phe Ser
      130            135            140

Asn Gly Thr Val Leu Tyr Ala Leu Arg Ile Thr Thr Thr Val Ala Cys
      145            150            155            160

Asn Met Asp Leu Ser Lys Tyr Pro Met Asp Thr Gln Thr Cys Lys Leu
      165            170            175

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Leu	Arg	Gly	Asn	Asp	Ser	Val	Arg	Gly	Leu	Glu	His	Leu	Arg	Leu	Ala			
		195					200					205						
Gln	Tyr	Thr	Ile	Glu	Arg	Tyr	Phe	Thr	Leu	Val	Thr	Arg	Ser	Gln	Gln			
	210					215					220							
Glu	Thr	Gly	Asn	Tyr	Thr	Arg	Leu	Val	Leu	Gln	Phe	Glu	Leu	Arg	Arg			
225					230					235					240			
Asn	Val	Leu	Tyr	Phe	Ile	Leu	Glu	Thr	Tyr	Val	Pro	Ser	Thr	Phe	Leu			
			245						250					255				
Val	Val	Leu	Ser	Trp	Val	Ser	Phe	Trp	Ile	Ser	Leu	Asp	Ser	Val	Pro			
			260					265					270					
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<211> 6158

<212> DNA

<213> Homo sapiens

<220>

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<222> (1)..(6158)

<223> n = g, a, c or t

<400> 121

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<211> 1806
<212> PRT
<213> Homo sapiens

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<220>
<221> MOD_RES
<222> (1)..(1806)
<223> Xaa = any amino acid

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 Glu Gly Ala Arg Gly Phe Pro Gly Pro Pro Gly Pro Ile Gly Leu Gln  
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 Gly Leu Pro Gly Pro Pro Gly Glu Lys Gly Glu Asn Gly Asp Val Gly  
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 Pro Trp Gly Pro Pro Gly Pro Pro Gly Pro Arg Gly Pro Gln Gly Pro  
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 Asn Gly Ala Asp Gly Pro Gln Gly Pro Pro Gly Ser Val Gly Ser Val  
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 Gly Gly Val Gly Glu Lys Gly Glu Pro Gly Glu Ala Gly Asn Pro Gly  
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 Pro Pro Gly Glu Ala Gly Val Gly Gly Pro Lys Gly Glu Arg Gly Glu  
 1265 1270 1275 1280  
 Lys Gly Glu Ala Gly Pro Pro Gly Ala Ala Gly Pro Pro Gly Ala Lys  
 1285 1290 1295  
 Gly Pro Pro Gly Asp Asp Gly Pro Lys Gly Asn Pro Gly Pro Val Gly  
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Phe Pro Gly Asp Pro Gly Pro Pro Gly Glu Leu Gly Pro Ala Gly Gln  
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 Asp Gly Val Gly Gly Asp Lys Gly Glu Asp Gly Asp Pro Gly Gln Pro  
 1330 1335 1340  
 Gly Pro Pro Gly Pro Ser Gly Glu Ala Gly Pro Pro Gly Pro Pro Gly  
 1345 1350 1355 1360  
 Lys Arg Gly Pro Pro Gly Ala Ala Gly Ala Glu Gly Arg Gln Gly Glu  
 1365 1370 1375  
 Lys Gly Ala Lys Gly Glu Ala Gly Ala Glu Gly Pro Pro Gly Lys Thr  
 1380 1385 1390  
 Gly Pro Val Gly Pro Gln Gly Pro Ala Gly Lys Pro Gly Pro Glu Gly  
 1395 1400 1405  
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 1410 1415 1420  
 Ala Gly Gln Asp Gly Pro Pro Gly Pro Met Gly Pro Pro Gly Leu Pro  
 1425 1430 1435 1440  
 Gly Leu Lys Gly Asp Pro Gly Ser Lys Gly Glu Lys Gly His Pro Gly  
 1445 1450 1455  
 Leu Ile Gly Leu Ile Gly Pro Pro Gly Glu Gln Gly Glu Lys Gly Asp  
 1460 1465 1470  
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 1475 1480 1485  
 Gly Ile Pro Gly Pro Ala Gly Pro Leu Gly Pro Pro Gly Pro Pro Gly  
 1490 1495 1500  
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 Gly Pro Pro Gly Glu Val Ile Gln Pro Leu Pro Ile Leu Ser Ser Lys  
 1540 1545 1550  
 Lys Thr Arg Arg His Thr Glu Gly Met Gln Ala Asp Ala Asp Asp Asn  
 1555 1560 1565  
 Ile Leu Asp Tyr Ser Asp Gly Met Glu Glu Ile Phe Gly Ser Leu Asn  
 1570 1575 1580  
 Ser Leu Lys Gln Asp Ile Glu His Met Lys Phe Pro Met Gly Thr Gln  
 1585 1590 1595 1600  
 Thr Asn Pro Ala Arg Thr Cys Lys Asp Leu Gln Leu Ser His Pro Asp  
 1605 1610 1615  
 Phe Pro Asp Gly Glu Tyr Trp Ile Asp Pro Asn Gln Gly Cys Ser Gly  
 1620 1625 1630

Asp Ser Phe Lys Val Tyr Cys Asn Phe Thr Ser Gly Gly Glu Thr Cys  
 1635 1640 1645  
 Ile Tyr Pro Asp Lys Lys Ser Glu Gly Val Arg Ile Ser Ser Trp Pro  
 1650 1655 1660  
 Lys Glu Lys Pro Gly Ser Trp Phe Ser Glu Phe Lys Arg Gly Lys Leu  
 1665 1670 1675 1680  
 Leu Ser Tyr Leu Asp Val Glu Gly Asn Ser Ile Asn Met Val Gln Met  
 1685 1690 1695  
 Thr Phe Leu Lys Leu Leu Thr Ala Ser Ala Arg Gln Asn Phe Thr Tyr  
 1700 1705 1710  
 His Cys His Gln Ser Ala Ala Trp Tyr Asp Val Ser Ser Gly Ser Tyr  
 1715 1720 1725  
 Asp Lys Ala Leu Arg Phe Leu Gly Ser Asn Asp Glu Glu Met Ser Tyr  
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 1745 1750 1755 1760  
 Lys Gly Tyr Glu Lys Thr Val Ile Glu Ile Asn Thr Pro Lys Ile Asp  
 1765 1770 1775  
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 1795 1800 1805

<210> 123  
 <211> 1440  
 <212> DNA  
 <213> Homo sapiens

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 <212> PRT  
 <213> Homo sapiens

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                   20                  25                  30  
 Pro Thr Asn Asn Phe Thr Asp Ile Glu Ala Ala Leu Lys Ala Gln Leu  
                   35                  40                  45  
 Asp Ser Ala Asp Ile Pro Lys Ala Arg Arg Lys Arg Tyr Ile Ser Gln  
           50                  55                  60  
 Asn Asp Met Ile Ala Ile Leu Asp Tyr His Asn Gln Val Arg Gly Lys  
   65                  70                  75                  80  
 Val Phe Pro Pro Ala Ala Asn Met Glu Tyr Met Val Trp Asp Glu Asn  
                   85                  90                  95  
 Leu Ala Lys Ser Ala Glu Ala Trp Ala Ala Thr Cys Ile Trp Asp His  
                   100                  105                  110  
 Gly Pro Ser Tyr Leu Leu Arg Phe Leu Gly Gln Asn Leu Ser Val Arg  
                   115                  120                  125  
 Thr Gly Arg Tyr Arg Ser Ile Leu Gln Leu Val Lys Pro Trp Tyr Asp  
   130                  135                  140  
 Glu Val Lys Asp Tyr Ala Phe Pro Tyr Pro Gln Asp Cys Asn Pro Arg  
 145                  150                  155                  160  
 Cys Pro Met Arg Cys Phe Gly Pro Met Cys Thr His Tyr Thr Gln Met  
                   165                  170                  175  
 Val Trp Ala Thr Ser Asn Arg Ile Gly Cys Ala Ile His Ala Cys Gln  
                   180                  185                  190  
 Asn Met Asn Val Trp Gly Ser Val Trp Arg Arg Ala Val Tyr Leu Val  
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 Cys Asn Tyr Ala Pro Lys Gly Asn Trp Ile Gly Glu Ala Pro Tyr Lys  
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 Val Gly Val Pro Cys Ser Ser Cys Pro Pro Ser Tyr Gly Gly Ser Cys  
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 Thr Asp Asn Leu Cys Phe Pro Gly Val Thr Ser Asn Tyr Leu Tyr Trp  
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Phe Lys

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 <211> 3171  
 <212> DNA  
 <213> Homo sapiens

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<210> 126  
 <211> 829  
 <212> PRT  
 <213> Homo sapiens

<400> 126

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Glu	Ala	Glu	Val	Thr	Leu	Glu	Ala	Gly	Gly	Ala	Glu	Gln	Glu	Pro	Gly	35	40	45	
Gln	Ala	Leu	Gly	Lys	Val	Phe	Met	Gly	Cys	Pro	Gly	Gln	Glu	Pro	Ala	50	55	60	
Leu	Phe	Ser	Thr	Asp	Asn	Asp	Asp	Phe	Thr	Val	Arg	Asn	Gly	Glu	Thr	65	70	75	80
Val	Gln	Glu	Arg	Arg	Ser	Leu	Lys	Glu	Arg	Asn	Pro	Leu	Lys	Ile	Phe	85	90	95	
Pro	Ser	Lys	Arg	Ile	Leu	Arg	Arg	His	Lys	Arg	Asp	Trp	Val	Val	Ala	100	105	110	
Pro	Ile	Ser	Val	Pro	Glu	Asn	Gly	Lys	Gly	Pro	Phe	Pro	Gln	Arg	Leu	115	120	125	
Asn	Gln	Leu	Lys	Ser	Asn	Lys	Asp	Arg	Asp	Thr	Lys	Ile	Phe	Tyr	Ser	130	135	140	
Ile	Thr	Gly	Pro	Gly	Ala	Asp	Ser	Pro	Pro	Glu	Gly	Val	Phe	Ala	Val	145	150	155	160
Glu	Lys	Glu	Thr	Gly	Trp	Leu	Leu	Leu	Asn	Lys	Pro	Leu	Asp	Arg	Glu	165	170	175	
Glu	Ile	Ala	Lys	Tyr	Glu	Leu	Phe	Gly	His	Ala	Val	Ser	Glu	Asn	Gly	180	185	190	
Ala	Ser	Val	Glu	Asp	Pro	Met	Asn	Ile	Ser	Ile	Ile	Val	Thr	Asp	Gln	195	200	205	
Asn	Asp	His	Lys	Pro	Lys	Phe	Thr	Gln	Asp	Thr	Phe	Arg	Gly	Ser	Val	210	215	220	
Leu	Glu	Gly	Val	Leu	Pro	Gly	Thr	Ser	Val	Met	Gln	Val	Thr	Ala	Thr	225	230	235	240
Asp	Glu	Asp	Asp	Ala	Ile	Tyr	Thr	Tyr	Asn	Gly	Val	Val	Ala	Tyr	Ser	245	250	255	
Ile	His	Ser	Gln	Glu	Pro	Lys	Asp	Pro	His	Asp	Leu	Met	Phe	Thr	Ile	260	265	270	
His	Arg	Ser	Thr	Gly	Thr	Ile	Ser	Val	Ile	Ser	Ser	Gly	Leu	Asp	Arg	275	280	285	



Glu	Lys	Val	Pro	Glu	Tyr	Thr	Leu	Thr	Ile	Gln	Ala	Thr	Asp	Met	Asp	
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Gly	Asp	Gly	Ser	Thr	Thr	Thr	Ala	Val	Ala	Val	Val	Glu	Ile	Leu	Asp	
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Ala	Asn	Asp	Asn	Ala	Pro	Met	Phe	Asp	Pro	Gln	Lys	Tyr	Glu	Ala	His	
			325					330						335		
Val	Pro	Glu	Asn	Ala	Val	Gly	His	Glu	Val	Gln	Arg	Leu	Thr	Val	Thr	
			340					345					350			
Asp	Leu	Asp	Ala	Pro	Asn	Ser	Pro	Ala	Trp	Arg	Ala	Thr	Tyr	Leu	Ile	
	355					360						365				
Met	Gly	Gly	Asp	Asp	Gly	Asp	His	Phe	Thr	Ile	Thr	Thr	His	Pro	Glu	
370					375						380					
Ser	Asn	Gln	Gly	Ile	Leu	Thr	Thr	Arg	Lys	Gly	Leu	Asp	Phe	Glu	Ala	
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Lys	Asn	Gln	His	Thr	Leu	Tyr	Val	Glu	Val	Thr	Asn	Glu	Ala	Pro	Phe	
			405					410						415		
Val	Leu	Lys	Leu	Pro	Thr	Ser	Thr	Ala	Thr	Ile	Val	Val	His	Val	Glu	
			420					425					430			
Asp	Val	Asn	Glu	Ala	Pro	Val	Phe	Val	Pro	Pro	Ser	Lys	Val	Val	Glu	
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Val	Gln	Glu	Gly	Ile	Pro	Thr	Gly	Glu	Pro	Val	Cys	Val	Tyr	Thr	Ala	
450						455					460					
Glu	Asp	Pro	Asp	Lys	Glu	Asn	Gln	Lys	Ile	Ser	Tyr	Arg	Ile	Leu	Arg	
465					470				475						480	
Asp	Pro	Ala	Gly	Trp	Leu	Ala	Met	Asp	Pro	Asp	Ser	Gly	Gln	Val	Thr	
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Ala	Val	Gly	Thr	Leu	Asp	Arg	Glu	Asp	Glu	Gln	Phe	Val	Arg	Asn	Asn	
			500					505					510			
Ile	Tyr	Glu	Val	Met	Val	Leu	Ala	Met	Asp	Asn	Gly	Ser	Pro	Pro	Thr	
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Thr	Gly	Thr	Gly	Thr	Leu	Leu	Leu	Thr	Leu	Ile	Asp	Val	Asn	Asp	His	
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Gly	Pro	Val	Pro	Glu	Pro	Arg	Gln	Ile	Thr	Ile	Cys	Asn	Gln	Ser	Pro	
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Val	Arg	His	Val	Leu	Asn	Ile	Thr	Asp	Lys	Asp	Leu	Ser	Pro	His	Thr	
			565					570						575		
Ser	Pro	Phe	Gln	Ala	Gln	Leu	Thr	Asp	Asp	Ser	Asp	Ile	Tyr	Trp	Thr	
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Ala	Glu	Val	Asn	Glu	Glu	Gly	Asp	Thr	Val	Val	Leu	Ser	Leu	Lys	Lys	
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Phe Leu Lys Gln Asp Thr Tyr Asp Val His Leu Ser Leu Ser Asp His  
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Gly Asn Lys Glu Gln Leu Thr Val Ile Arg Ala Thr Val Cys Asp Cys  
625 630 635 640  
His Gly His Val Glu Thr Cys Pro Gly Pro Trp Lys Gly Gly Phe Ile  
645 650 655  
Leu Pro Val Leu Gly Ala Val Leu Ala Leu Leu Phe Leu Leu Leu Val  
660 665 670  
Leu Leu Leu Leu Val Arg Lys Lys Arg Lys Ile Lys Glu Pro Leu Leu  
675 680 685  
Leu Pro Glu Asp Asp Thr Arg Asp Asn Val Phe Tyr Tyr Gly Glu Glu  
690 695 700  
Gly Gly Gly Glu Glu Asp Gln Asp Tyr Asp Ile Thr Gln Leu His Arg  
705 710 715 720  
Gly Leu Glu Ala Arg Pro Glu Val Val Leu Arg Asn Asp Val Ala Pro  
725 730 735  
Thr Ile Ile Pro Thr Pro Met Tyr Arg Pro Arg Pro Ala Asn Pro Asp  
740 745 750  
Glu Ile Gly Asn Phe Ile Ile Glu Asn Leu Lys Ala Ala Asn Thr Asp  
755 760 765  
Pro Thr Ala Pro Pro Tyr Asp Thr Leu Leu Val Phe Asp Tyr Glu Gly  
770 775 780  
Ser Gly Ser Asp Ala Ala Ser Leu Ser Ser Leu Thr Ser Ser Ala Ser  
785 790 795 800  
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Lys Lys Leu Ala Asp Met Tyr Gly Gly Gly Glu Asp Asp  
820 825

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<211> 1189  
<212> DNA  
<213> Homo sapiens

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<210> 128
<211> 224
<212> PRT
<213> Homo sapiens

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Ala Pro Ala His Pro Gln Gln His Ile Cys His Ser Ala Leu Val Ile
  35              40              45

Arg Ala Lys Ile Ser Ser Glu Lys Val Val Pro Ala Ser Ala Asp Pro
  50              55              60

Ala Asp Thr Glu Lys Met Leu Arg Tyr Glu Ile Lys Gln Ile Lys Met
  65              70              75              80

Phe Lys Gly Phe Glu Lys Val Lys Asp Val Gln Tyr Ile Tyr Thr Pro
              85              90              95

Phe Asp Ser Ser Leu Cys Gly Val Lys Leu Glu Ala Asn Ser Gln Lys
              100              105              110

Gln Tyr Leu Leu Thr Gly Gln Val Leu Ser Asp Gly Lys Val Phe Ile
              115              120              125

His Leu Cys Asn Tyr Ile Glu Pro Trp Glu Asp Leu Ser Leu Val Gln
              130              135              140

Arg Glu Ser Leu Asn His His Tyr His Leu Asn Cys Gly Cys Gln Ile
              145              150              155              160

Thr Thr Cys Tyr Thr Val Pro Cys Thr Ile Ser Ala Pro Asn Glu Cys
              165              170              175

Leu Trp Thr Asp Trp Leu Leu Glu Arg Lys Leu Tyr Gly Tyr Gln Ala
              180              185              190

Gln His Tyr Val Cys Met Lys His Val Asp Gly Thr Cys Ser Trp Tyr
              195              200              205

Arg Gly His Leu Pro Leu Arg Lys Glu Phe Val Asp Ile Val Gln Pro
              210              215              220

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<210> 129  
 <211> 1909  
 <212> DNA  
 <213> Homo sapiens

<400> 129  
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 attgccagtt ttcagcctcc tcatgcctcc gtctccttta gacgacaggg tagtagtggc 180  
 actatctagg cccgtccgac ctcaggatct caacctttgt ttagactcta gttaccttgg 240  
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 caaggctgcg aatctgacgt atatgccctc atccagcggc tctgcccgct cgctgaattg 360  
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 aacccaagcc attgccgctg gcaccaccac cactgccatc ggaacctcta ccacctgccc 480  
 tgctaaccag atggtcaaca ataatgagaa tacaggctct ctaagtccat caagtggggg 540  
 gggcagccct gtgtcagggg cccccaagca gctagccagc atcaaaaataa tctaccccaa 600  
 tgacttggca aagaagatga ccaaatgcag caagagtcac ctgccgagtc agggccctgt 660  
 catcattgac tgcaggccct tcatggagta caacaagagt cacatccaag gagctgtcca 720  
 cattaactgt gccgataaga tcagccggcg gagactgcag cagggcaaga tcactgtcct 780  
 agacttgatt tcctgtaggg aaggcaagga ctctttcaag aggatctttt ccaaagaaat 840  
 tatagtttat gatgagaata ccaatgaacc aagccgagtg atgccctccc agccacttca 900  
 catagtcctc gagtccctga agagagaagg caaagaacct ctggtgttga aaggtggact 960  
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 ccgggaggtg gggggcgggc catccgcggc ctcgagcttg ctacctcagc ccatcccccac 1080  
 caccctgac atcgagaacg ctgagctcac ccccatcttg cccttcctgt tccttggcaa 1140  
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 cgtcaccact catcttcccc tctaccacta tgagaaaggc ctgttcaact acaagcggct 1260  
 gccagccact gacagcaaca agcagaacct gcggcagtac tttgaagagg cttttgagtt 1320  
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 ccgctccgcc accatcgtca tcgcttactt gatgaagcac actcggatga ccatgactga 1440  
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 ttgtagttgg gagtaaagtt tgtgaatgga aacaaacttg gttaaactt ttatttttaa 1740  
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 tggtttctcc ccctttttcc tttaaagcta ntttgtaaaa gtttatgag 1909

<210> 130  
 <211> 482  
 <212> PRT  
 <213> Homo sapiens

<400> 130  
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 20 25 30  
 Gly Ser Ala Asn Pro Gly Ser Asn Ser His Pro Pro Val Ile Ala Thr  
 35 40 45  
 Thr Val Val Ser Leu Lys Ala Ala Asn Leu Thr Tyr Met Pro Ser Ser  
 50 55 60  
 Ser Gly Ser Ala Arg Ser Leu Asn Cys Gly Cys Ser Ser Ala Ser Cys  
 65 70 75 80

Cys	Thr	Val	Ala	Thr	Tyr	Asp	Lys	Asp	Asn	Gln	Ala	Gln	Thr	Gln	Ala	
				85					90					95		
Ile	Ala	Ala	Gly	Thr	Thr	Thr	Thr	Ala	Ile	Gly	Thr	Ser	Thr	Thr	Cys	
			100					105					110			
Pro	Ala	Asn	Gln	Met	Val	Asn	Asn	Asn	Glu	Asn	Thr	Gly	Ser	Leu	Ser	
		115					120					125				
Pro	Ser	Ser	Gly	Val	Gly	Ser	Pro	Val	Ser	Gly	Thr	Pro	Lys	Gln	Leu	
	130					135					140					
Ala	Ser	Ile	Lys	Ile	Ile	Tyr	Pro	Asn	Asp	Leu	Ala	Lys	Lys	Met	Thr	
145				150						155					160	
Lys	Cys	Ser	Lys	Ser	His	Leu	Pro	Ser	Gln	Gly	Pro	Val	Ile	Ile	Asp	
			165						170					175		
Cys	Arg	Pro	Phe	Met	Glu	Tyr	Asn	Lys	Ser	His	Ile	Gln	Gly	Ala	Val	
			180					185					190			
His	Ile	Asn	Cys	Ala	Asp	Lys	Ile	Ser	Arg	Arg	Arg	Leu	Gln	Gln	Gly	
		195					200					205				
Lys	Ile	Thr	Val	Leu	Asp	Leu	Ile	Ser	Cys	Arg	Glu	Gly	Lys	Asp	Ser	
	210					215					220					
Phe	Lys	Arg	Ile	Phe	Ser	Lys	Glu	Ile	Ile	Val	Tyr	Asp	Glu	Asn	Thr	
225					230					235					240	
Asn	Glu	Pro	Ser	Arg	Val	Met	Pro	Ser	Gln	Pro	Leu	His	Ile	Val	Leu	
				245					250					255		
Glu	Ser	Leu	Lys	Arg	Glu	Gly	Lys	Glu	Pro	Leu	Val	Leu	Lys	Gly	Gly	
			260					265					270			
Leu	Ser	Ser	Phe	Lys	Gln	Asn	His	Glu	Asn	Leu	Cys	Asp	Asn	Ser	Leu	
		275				280						285				
Gln	Leu	Gln	Glu	Cys	Arg	Glu	Val	Gly	Gly	Gly	Ala	Ser	Ala	Ala	Ser	
	290					295					300					
Ser	Leu	Leu	Pro	Gln	Pro	Ile	Pro	Thr	Thr	Pro	Asp	Ile	Glu	Asn	Ala	
305				310						315					320	
Glu	Leu	Thr	Pro	Ile	Leu	Pro	Phe	Leu	Phe	Leu	Gly	Asn	Glu	Gln	Asp	
				325					330					335		
Ala	Gln	Asp	Leu	Asp	Thr	Met	Gln	Arg	Leu	Asn	Ile	Gly	Tyr	Val	Ile	
			340					345					350			
Asn	Val	Thr	Thr	His	Leu	Pro	Leu	Tyr	His	Tyr	Glu	Lys	Gly	Leu	Phe	
		355					360					365				
Asn	Tyr	Lys	Arg	Leu	Pro	Ala	Thr	Asp	Ser	Asn	Lys	Gln	Asn	Leu	Arg	
	370					375					380					
Gln	Tyr	Phe	Glu	Glu	Ala	Phe	Glu	Phe	Ile	Glu	Glu	Ala	His	Gln	Cys	
385					390					395					400	

Gly Lys Gly Leu Leu Ile His Cys Gln Ala Gly Val Ser Arg Ser Ala  
 405 410 415  
 Thr Ile Val Ile Ala Tyr Leu Met Lys His Thr Arg Met Thr Met Thr  
 420 425 430  
 Asp Ala Tyr Lys Phe Val Lys Gly Lys Arg Pro Ile Ile Ser Pro Asn  
 435 440 445  
 Leu Asn Phe Met Gly Gln Leu Leu Glu Phe Glu Glu Asp Leu Asn Asn  
 450 455 460  
 Gly Val Thr Pro Arg Ile Leu Thr Pro Lys Leu Met Gly Val Glu Thr  
 465 470 475 480  
 Val Val

<210> 131  
 <211> 1493  
 <212> DNA  
 <213> Homo sapiens

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 ttggctgtga tattgtgtgc tacagttggt caaggcttcc ccatgttcaa aagaggacgc 180  
 tgtctttgca taggccctgg ggtaaaagca gtgaaagtgg cagatattga gaaagcctcc 240  
 ataatgtacc caagtaacaa ctgtgacaaa atagaagtga ttattaccct gaaagaaaat 300  
 aaaggacaac gatgcctaaa tcccaaatcg aagcaagcaa ggcttataat caaaaaagtt 360  
 gaaagaaaga attttttaaaa atatcaaaac atatgaagtc ctggaaaagg gcatctgaaa 420  
 aacctagaac aagtttaact gtgactactg aaatgacaag aattctacag taggaaactg 480  
 agacttttct atgggttttgt gacttttcaac ttttgtacag ttatgtgaag gatgaaagg 540  
 gggtgaaagg accaaaaaca gaaatacagt cttcctgaat gaatgacaat cagaattcca 600  
 ctgcccacag gagtccagca attaaatgga tttctaggaa aagctacctt aagaaaggct 660  
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 gagaacattt ctgtctctag aagttatctg tctgtattga tctttatgct atattactat 840  
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 catctatgtg tcgtaaagca ttcctcaaac attttttcat gcaaatacac acttctttcc 960  
 ccaaatatca tgtagcacat caatatgtag ggaaacattc ttatgcatca tttgggtttgt 1020  
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 tgggatactg gcaacagtgc acatatttca taaccaaatt agcagcaccg gtcttaattt 1140  
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 aatcactttt acttttttgta attctgtctc ttagaaaaat acataatcta atcaatttct 1380  
 ttgttcatgc ctatatactg taaaatttag gtataactca gactagttaa aagaatcaaa 1440  
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<210> 132  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 132  
 Met Ser Val Lys Gly Met Ala Ile Ala Leu Ala Val Ile Leu Cys Ala  
 1 5 10 15



Thr Val Val Gln Gly Phe Pro Met Phe Lys Arg Gly Arg Cys Leu Cys  
 20 25 30  
 Ile Gly Pro Gly Val Lys Ala Val Lys Val Ala Asp Ile Glu Lys Ala  
 35 40 45  
 Ser Ile Met Tyr Pro Ser Asn Asn Cys Asp Lys Ile Glu Val Ile Ile  
 50 55 60  
 Thr Leu Lys Glu Asn Lys Gly Gln Arg Cys Leu Asn Pro Lys Ser Lys  
 65 70 75 80  
 Gln Ala Arg Leu Ile Ile Lys Lys Val Glu Arg Lys Asn Phe  
 85 90

<210> 133  
 <211> 1521  
 <212> DNA  
 <213> Homo sapiens

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 cgtgcgtccc tagagtcgag cggggcaagg gagccagtgg ccgccgacgg gggaccggga 180  
 aacttttctg ggctcctgga gagccctgta gccgcgctcc atgctccggc agcggccccga 240  
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 acagacatct gccaaagcaa acaggcccga aaccactctg gcaccaccat accacattg 660  
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 aggggtgagg cctcaggaca aggaaacagg tatcagcatg atggtagcag aaaccttatc 780  
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 aaatatatat attttgtctg a 1521

<210> 134  
 <211> 260  
 <212> PRT  
 <213> Homo sapiens

<400> 134  
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 Cys Ala Met Ala Val Leu Leu Thr Lys Gly Glu Ile Arg Cys Tyr Cys  
 20 25 30

Asp Ala Ala His Cys Val Ala Thr Gly Tyr Met Cys Lys Ser Glu Leu  
           35                                  40                                  45  
 Ser Ala Cys Phe Ser Arg Leu Leu Asp Pro Gln Asn Ser Asn Ser Pro  
           50                                  55                                  60  
 Leu Thr His Gly Cys Leu Asp Ser Leu Ala Ser Thr Thr Asp Ile Cys  
       65                                  70                                  75                                  80  
 Gln Ala Lys Gln Ala Arg Asn His Ser Gly Thr Thr Ile Pro Thr Leu  
                                   85                                  90                                  95  
 Glu Cys Cys His Glu Asp Met Cys Asn Tyr Arg Gly Leu His Asp Val  
                                   100                                  105                                  110  
 Leu Ser Pro Pro Arg Gly Glu Ala Ser Gly Gln Gly Asn Arg Tyr Gln  
                                   115                                  120                                  125  
 His Asp Gly Ser Arg Asn Leu Ile Thr Lys Val Gln Glu Leu Thr Ser  
       130                                  135                                  140  
 Ser Lys Glu Leu Trp Phe Arg Ala Ala Val Ile Ala Val Pro Ile Ala  
       145                                  150                                  155                                  160  
 Gly Gly Leu Ile Leu Val Leu Leu Ile Met Leu Ala Leu Arg Met Leu  
                                   165                                  170                                  175  
 Arg Ser Glu Asn Lys Arg Leu Gln Asp Gln Arg Gln Gln Met Leu Ser  
                                   180                                  185                                  190  
 Arg Leu His Tyr Ser Phe His Gly His His Ser Lys Lys Gly Gln Val  
                                   195                                  200                                  205  
 Ala Lys Leu Asp Leu Glu Cys Met Val Pro Val Ser Gly His Glu Asn  
       210                                  215                                  220  
 Cys Cys Leu Thr Cys Asp Lys Met Arg Gln Ala Asp Leu Ser Asn Asp  
       225                                  230                                  235                                  240  
 Lys Ile Leu Ser Leu Val His Trp Gly Met Tyr Ser Gly His Gly Lys  
                                   245                                  250                                  255  
 Leu Glu Phe Val  
                                   260

<210> 135  
 <211> 2539  
 <212> DNA  
 <213> Homo sapiens

<400> 135  
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 accgtcttca ggccaggcct tggatggtat actgtaaatt cagcatatgg agataccatt 180  
 atcatacctt gccgacttga cgtacctcag aatctcatgt ttggcaaag gaaatatgaa 240  
 aagcccgatg gctccccagt atttattgcc ttcagatcct ctacaaagaa aagtgtgcag 300  
 tacgacgatg taccagaata caaagacaga ttgaacctct cagaaaacta cactttgtct 360  
 atcagtaatg caaggatcag tgatgaaaag agatttgtgt gcatgctagt aactgaggac 420  
 aacgtgtttg aggcacctac aatagtcaag gtgttcaagc aaccatctaa acctgaaatt 480  
 gtaagcaaag cactgtttct cgaaacagag cagctaaaaa agttgggtga ctgcatttca 540

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gaagacagtt atccagatgg caatatcaca tgggtacagga atggaaaagt gctacatccc 600
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accatgactt ccaccctgga gtacaagaca accaaggctg acatacaaat gccattcacc 720
tgctcgggtga catattatgg accatctggc cagaaaacaa ttcatttctga acaggcagta 780
tttgatattt actatcctac agagcagggtg acaatacaag tgctgccacc aaaaaatgcc 840
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gtctctgcta taagtattcc agaacacgat gaggcagacg agataagtga tgaaaacaga 1620
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tctcataagc acctaaaacc caaagggtggc agcttgtgaa gattggggac actcatattg 2340
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gacaccatag gagccgactc tttgatatgc caccagcgaa ctctcagaaa taaatcacag 2460
atgcatatag acacacatac ataatggtac tcccaaactg acaattttac ctattctgaa 2520
aaagacataa aacagaatt 2539

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<210> 136  
 <211> 583  
 <212> PRT  
 <213> Homo sapiens

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<400> 136
Met Glu Ser Lys Gly Ala Ser Ser Cys Arg Leu Leu Phe Cys Leu Leu
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Ile Ser Ala Thr Val Phe Arg Pro Gly Leu Gly Trp Tyr Thr Val Asn
          20                      25                      30

Ser Ala Tyr Gly Asp Thr Ile Ile Ile Pro Cys Arg Leu Asp Val Pro
          35                      40                      45

Gln Asn Leu Met Phe Gly Lys Trp Lys Tyr Glu Lys Pro Asp Gly Ser
          50                      55                      60

Pro Val Phe Ile Ala Phe Arg Ser Ser Thr Lys Lys Ser Val Gln Tyr
          65                      70                      75                      80

Asp Asp Val Pro Glu Tyr Lys Asp Arg Leu Asn Leu Ser Glu Asn Tyr
          85                      90                      95

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Thr	Leu	Ser	Ile	Ser	Asn	Ala	Arg	Ile	Ser	Asp	Glu	Lys	Arg	Phe	Val	
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Cys	Met	Leu	Val	Thr	Glu	Asp	Asn	Val	Phe	Glu	Ala	Pro	Thr	Ile	Val	
		115					120					125				
Lys	Val	Phe	Lys	Gln	Pro	Ser	Lys	Pro	Glu	Ile	Val	Ser	Lys	Ala	Leu	
	130					135					140					
Phe	Leu	Glu	Thr	Glu	Gln	Leu	Lys	Lys	Leu	Gly	Asp	Cys	Ile	Ser	Glu	
145					150					155					160	
Asp	Ser	Tyr	Pro	Asp	Gly	Asn	Ile	Thr	Trp	Tyr	Arg	Asn	Gly	Lys	Val	
				165					170					175		
Leu	His	Pro	Leu	Glu	Gly	Ala	Val	Val	Ile	Ile	Phe	Lys	Lys	Glu	Met	
			180					185					190			
Asp	Pro	Val	Thr	Gln	Leu	Tyr	Thr	Met	Thr	Ser	Thr	Leu	Glu	Tyr	Lys	
		195					200					205				
Thr	Thr	Lys	Ala	Asp	Ile	Gln	Met	Pro	Phe	Thr	Cys	Ser	Val	Thr	Tyr	
	210					215					220					
Tyr	Gly	Pro	Ser	Gly	Gln	Lys	Thr	Ile	His	Ser	Glu	Gln	Ala	Val	Phe	
225					230					235					240	
Asp	Ile	Tyr	Tyr	Pro	Thr	Glu	Gln	Val	Thr	Ile	Gln	Val	Leu	Pro	Pro	
				245					250					255		
Lys	Asn	Ala	Ile	Lys	Glu	Gly	Asp	Asn	Ile	Thr	Leu	Lys	Cys	Leu	Gly	
			260					265					270			
Asn	Gly	Asn	Pro	Pro	Pro	Glu	Glu	Phe	Leu	Phe	Tyr	Leu	Pro	Gly	Gln	
		275					280					285				
Pro	Glu	Gly	Ile	Arg	Ser	Ser	Asn	Thr	Tyr	Thr	Leu	Met	Asp	Val	Arg	
	290					295					300					
Arg	Asn	Ala	Thr	Gly	Asp	Tyr	Lys	Cys	Ser	Leu	Ile	Asp	Lys	Lys	Ser	
305					310					315					320	
Met	Ile	Ala	Ser	Thr	Ala	Ile	Thr	Val	His	Tyr	Leu	Asp	Leu	Ser	Leu	
				325					330					335		
Asn	Pro	Ser	Gly	Glu	Val	Thr	Arg	Gln	Ile	Gly	Asp	Ala	Leu	Pro	Val	
			340					345					350			
Ser	Cys	Thr	Ile	Ser	Ala	Ser	Arg	Asn	Ala	Thr	Val	Val	Trp	Met	Lys	
		355					360					365				
Asp	Asn	Ile	Arg	Leu	Arg	Ser	Ser	Pro	Ser	Phe	Ser	Ser	Leu	His	Tyr	
	370					375					380					
Gln	Asp	Ala	Gly	Asn	Tyr	Val	Cys	Glu	Thr	Ala	Leu	Gln	Glu	Val	Glu	
385					390					395					400	
Gly	Leu	Lys	Lys	Arg	Glu	Ser	Leu	Thr	Leu	Ile	Val	Glu	Gly	Lys	Pro	
				405					410					415		

Gln Ile Lys Met Thr Lys Lys Thr Asp Pro Ser Gly Leu Ser Lys Thr  
 420 425 430  
 Ile Ile Cys His Val Glu Gly Phe Pro Lys Pro Ala Ile Gln Trp Thr  
 435 440 445  
 Ile Thr Gly Ser Gly Ser Val Ile Asn Gln Thr Glu Glu Ser Pro Tyr  
 450 455 460  
 Ile Asn Gly Arg Tyr Tyr Ser Lys Ile Ile Ile Ser Pro Glu Glu Asn  
 465 470 475 480  
 Val Thr Leu Thr Cys Thr Ala Glu Asn Gln Leu Glu Arg Thr Val Asn  
 485 490 495  
 Ser Leu Asn Val Ser Ala Ile Ser Ile Pro Glu His Asp Glu Ala Asp  
 500 505 510  
 Glu Ile Ser Asp Glu Asn Arg Glu Lys Val Asn Asp Gln Ala Lys Leu  
 515 520 525  
 Ile Val Gly Ile Val Val Gly Leu Leu Leu Ala Ala Leu Val Ala Gly  
 530 535 540  
 Val Val Tyr Trp Leu Tyr Met Lys Lys Ser Lys Thr Ala Ser Lys His  
 545 550 555 560  
 Val Asn Lys Asp Leu Gly Asn Met Glu Glu Asn Lys Lys Leu Glu Glu  
 565 570 575  
 Asn Asn His Lys Thr Glu Ala  
 580

<210> 137  
 <211> 1119  
 <212> DNA  
 <213> Homo sapiens

<400> 137  
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 agcaagtgtg gagctgaatt tcgtcgggtt tcgctggaaa gatcaaaacc tggaaaattt 120  
 gaggagtttt atggattact acaacatggt cataagatcc ccaatgttga cgttttggtg 180  
 ggctatgcag acatccatgg agacttacta cctataaata atgatgataa ttatcacaaa 240  
 gctgtttcaa cggccaatcc actgcttagg atattttatac aaaagaagga agaagcagac 300  
 tacagtgcct ttggtacaga cacgctaata aagaagaaga atgttttaac caacgtattg 360  
 cgtcctgaca accatagaaa aaagccacat atagtcatta gtatgccccca agactttaga 420  
 cctgtgtcct ctattataga cgtggatatt ctcccagaaa cgcacgtag ggtacgtctt 480  
 tacaaatacg gcacggagaa acccctagga ttctacatcc gggatggctc cagtgtcagg 540  
 gtaacaccac atggcttaga aaagggtcca gggatcttta tatccaggct tgtcccagga 600  
 ggtctggctc aaagtacagg actattagct gttaatgatg aagttttaga agttaatggc 660  
 atagaagttt cagggaagag ccttgatcaa gtaacagaca tgatgattgc aaatagccgt 720  
 aacctcatca taacagttag accggcaaac cagaggaata atgttgtag gaacagtcgg 780  
 acttctggca gttccggtca gtctactgat aacagccttc ttggctaccc acagcagatt 840  
 gaaccaagct ttgagccaga ggatgaagac agcgaagaag atgacattat cattgaagac 900  
 aatggagtgc cacagcagat tccaaaagct gttcctaata ctgagagcct ggagtcatta 960  
 acacagatag agctaagctt tgagtctgga cagaatggct ttattccctc taatgaagtg 1020  
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 aaactcttag aagaagatgg aacaatcata acattatga 1119

<210> 138  
 <211> 372  
 <212> PRT  
 <213> Homo sapiens

<400> 138

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Met	Glu	Val	Lys	Ser	Lys	Phe	Gly	Ala	Glu	Phe	Arg	Arg	Phe	Ser	Leu
			20					25					30		
Glu	Arg	Ser	Lys	Pro	Gly	Lys	Phe	Glu	Glu	Phe	Tyr	Gly	Leu	Leu	Gln
		35					40					45			
His	Val	His	Lys	Ile	Pro	Asn	Val	Asp	Val	Leu	Val	Gly	Tyr	Ala	Asp
	50					55					60				
Ile	His	Gly	Asp	Leu	Leu	Pro	Ile	Asn	Asn	Asp	Asp	Asn	Tyr	His	Lys
65					70					75					80
Ala	Val	Ser	Thr	Ala	Asn	Pro	Leu	Leu	Arg	Ile	Phe	Ile	Gln	Lys	Lys
				85					90					95	
Glu	Glu	Ala	Asp	Tyr	Ser	Ala	Phe	Gly	Thr	Asp	Thr	Leu	Ile	Lys	Lys
			100					105					110		
Lys	Asn	Val	Leu	Thr	Asn	Val	Leu	Arg	Pro	Asp	Asn	His	Arg	Lys	Lys
		115					120					125			
Pro	His	Ile	Val	Ile	Ser	Met	Pro	Gln	Asp	Phe	Arg	Pro	Val	Ser	Ser
		130				135					140				
Ile	Ile	Asp	Val	Asp	Ile	Leu	Pro	Glu	Thr	His	Arg	Arg	Val	Arg	Leu
145					150					155					160
Tyr	Lys	Tyr	Gly	Thr	Glu	Lys	Pro	Leu	Gly	Phe	Tyr	Ile	Arg	Asp	Gly
				165					170					175	
Ser	Ser	Val	Arg	Val	Thr	Pro	His	Gly	Leu	Glu	Lys	Val	Pro	Gly	Ile
			180					185					190		
Phe	Ile	Ser	Arg	Leu	Val	Pro	Gly	Gly	Leu	Ala	Gln	Ser	Thr	Gly	Leu
		195					200					205			
Leu	Ala	Val	Asn	Asp	Glu	Val	Leu	Glu	Val	Asn	Gly	Ile	Glu	Val	Ser
	210					215					220				
Gly	Lys	Ser	Leu	Asp	Gln	Val	Thr	Asp	Met	Met	Ile	Ala	Asn	Ser	Arg
225					230					235					240
Asn	Leu	Ile	Ile	Thr	Val	Arg	Pro	Ala	Asn	Gln	Arg	Asn	Asn	Val	Val
				245					250					255	
Arg	Asn	Ser	Arg	Thr	Ser	Gly	Ser	Ser	Gly	Gln	Ser	Thr	Asp	Asn	Ser
			260					265					270		
Leu	Leu	Gly	Tyr	Pro	Gln	Gln	Ile	Glu	Pro	Ser	Phe	Glu	Pro	Glu	Asp
		275					280					285			



Glu Asp Ser Glu Glu Asp Asp Ile Ile Ile Glu Asp Asn Gly Val Pro  
 290 295 300  
 Gln Gln Ile Pro Lys Ala Val Pro Asn Thr Glu Ser Leu Glu Ser Leu  
 305 310 315 320  
 Thr Gln Ile Glu Leu Ser Phe Glu Ser Gly Gln Asn Gly Phe Ile Pro  
 325 330 335  
 Ser Asn Glu Val Ser Leu Ala Ala Ile Ala Ser Ser Ser Asn Thr Glu  
 340 345 350  
 Phe Glu Thr His Ala Pro Asp Gln Lys Leu Leu Glu Glu Asp Gly Thr  
 355 360 365  
 Ile Ile Thr Leu  
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<210> 139  
 <211> 6  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:HIS6 epitope  
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<210> 140  
 <211> 24  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:T7-T24 oligo

<220>  
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<400> 140  
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24

<210> 141  
 <211> 4  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:endoplasmic  
 reticulum retention sequence

<400> 141  
Lys Asp Glu Leu  
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